



# **CALTRAIN ELECTRIFICATION PROGRAM**

**San Francisco to San Jose (MP 0.0 to 52.0)**

**U.S. Department of Transportation**

**Federal Transit Administration**

## **Environmental Assessment/ Final Environmental Impact Report Volume II**

**Responses to Public Comments on the Environmental  
Assessment/Draft Environmental Impact Report**



**PENINSULA CORRIDOR JOINT POWERS BOARD**

**July 2009**

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# **Responses to Public Comments on the Caltrain Electrification Program Environmental Assessment / Draft Environmental Impact Report**

## **INTRODUCTION**

The Caltrain Electrification Program Environmental Assessment / Draft Environmental Impact Report (EA/DEIR) was released for public review on April 5, 2004. Display ads noticing availability of the Draft EIS/EIR were published in the San Francisco Chronicle, San Jose Mercury News, Palo Alto Daily News, Redwood City Daily News, San Mateo Daily News, and Burlingame Daily News, and similar information was posted at Caltrain stations and in "Take One" cards on trains. About 300 flyers were directly sent to the entire project mailing list to announce the availability of the EA/DEIR and advertise the public hearings.

The EA/DEIR was made available for on-line review on the Caltrain web site, and 238 printed copies of the EA/DEIR were directly mailed to agencies and individuals. The document was also available for review at the following locations:

- Caltrain Headquarters, Second Floor Reception, 1250 San Carlos Ave., San Carlos
- San Francisco Central Library, 100 Larkin Street (at Grove)
- Main libraries of cities along the Caltrain Corridor.

Four public hearings were held:

- Thursday, April 22, 2004 at 6:00 until 8:00 pm – 600 Townsend Street at 7<sup>th</sup> Street, San Francisco,
- Saturday, April 24, 2004 at 10:00 am until noon – Sunnyvale Community Center Arboretum, 550 E. Remington Drive, Sunnyvale, Santa Clara,
- Wednesday, April 28, 2004 at 6:00 until 8:00 pm – Morgan Hill Cultural and Community Center, 17000 Monterey Road, Morgan Hill, and
- Saturday, May 1, 2004 at 10:00 am until noon – Caltrain Headquarters, 1250 San Carlos Avenue, San Carlos, California.

The comment period extended from April 12 until May 25, 2004. The agencies, organizations, associations, businesses, and individuals listed in the table beginning on the next page provided comments on the EA/DEIR.

*After the close of the comment period on the EA/DEIR in summer 2004, and in conjunction with identifying a Preferred Alternative, the Peninsula Corridor Joint Powers Board (JPB) made a decision to reduce the project area for the Electrification Program due to financial and other considerations. The reduced-scope project proposes electrification of the Caltrain line from its northern terminus at the 4<sup>th</sup> and King Street Station in San Francisco to three miles south of the Tamien Station in San Jose, a total distance of over 51 miles. Diesel-powered locomotive service would continue to be provided between the San Jose Diridon Station and Gilroy.*

This final environmental document, *which consists of three volumes, has been modified to reflect the 51-mile electrification project.* Volume I is the EA/Final EIR, which is the EA/DEIR as revised *in response to comments.* Volume II contains responses to public and agency comments on the EA/DEIR, and Volume III contains the written comments and summaries of comments made at the public hearings. In the present Volume II, all public and agency comments are organized into specific topic categories. The following table provides the comment number(s) *for each agency, organization, association, business, or individual who commented.*

<b>Comment Contributors on Caltrain Electrification Program Environmental Assessment/ Draft EIR</b>	<b>Comment Number(s)</b>
<b>Federal Agencies</b>	
United States Environmental Protection Agency, Lisa B. Hanf, Manager, Federal Activities Office, May 25, 2004	2.1.1, 2.4.1, 5.5.1, 6.4.1, 7.1.1, 8.1.1, 20.1.1
Centers for Disease Control and Prevention (CDC), Dept. of Health & Human Services, Public Health Service, Paul Joe, DO, MPH, May 26, 2004	2.2.1
<b>State Agencies</b>	
State Clearinghouse, State of California, Governor's Office of Planning and Research, Terry Roberts, Director, May 26, 2004	20.1.2
California Department of Conservation, Division of Land Resource Protection, Dennis J. O'Bryant, Acting Assistant Director, May 14, 2004	2.4.2
California Department of Toxic Substances Control, Barbara J. Cook, P.E., Chief, Northern California Coastal Cleanup Operations Branch, April 9, 2004	13.1.1, 21.1.2
California Department of Transportation, Timothy C. Sable, District Branch Chief, April 2, 2004	22.1.1
California Transportation Commission, Bob Balgenorth, Chair, June 2, 2004	3.1.1
<b>Regional Agencies</b>	
Bay Area Air Quality Management District (BAAQMD), Jack P. Broadbent, Executive Officer/APCO, May 25, 2004	2.2.2, 2.7.1, 13.1.2
Metropolitan Transportation Commission, Bob Bates, Caltrain Liaison, May 25, 2004	4.1.1, 3.1.3, 6.5.1, 7.1.2, 11.1.1, 12.1.1, 21.1.3
<b>Local Agencies</b>	
Town of Atherton, Kathy McKeithen, Mayor, May 20, 2004	9.1.1, 10.1.2, 15.1.1, 17.2.1, 17.4.2, 21.1.7
Atherton Tree Committee, Denise Kupperman, Chairperson, and Kathy Anderson, Town of Atherton, May 25, 2004	17.4.5
City of Belmont, Craig A. Ewing, AICP, Planning and Community Development Director, April 7, 2004.	17.2.2
City of Brisbane, Michael Barnes, Mayor, May 12, 2004	2.2.4, 5.5.5, 10.1.3, 17.2.3, 21.1.8
City of Menlo Park, Kent Steffens, Director of Public Works, Engineering Division, May 25, 2004.	5.3.1, 5.5.6, 14.1.2, 16.2.2, 17.2.4, 17.4.3
City of Morgan Hill, J. Edwards Tewes, City Manager, April 22, 2004	16.1.2
City of Mountain View, Matt Pear, Mayor, May 18, 2004	2.0.2, 2.4.4, 2.7.4, 5.3.2, 5.5.7, 5.6.1, 11.1.2, 14.1.3, 17.1.3, 19.1.3
Redwood City, Planning & Redevelopment, Gary Bonte, Associate Planner, May 19, 2004	2.4.5, 5.5.8, 14.1.4, 15.1.2, 17.2.5
City of San Mateo, Department of Community Development, Stephen Scott, Principal Planner, May 14, 2004	2.3.2, 2.4.3, 6.6.3, 19.1.4, 21.1.9

<b>Comment Contributors on Caltrain Electrification Program Environmental Assessment/ Draft EIR</b>	<b>Comment Number(s)</b>
City of Santa Clara Planning Department, Geoffrey Goodfellow (Kevin L. Riley for), Director Planning and Inspection, May 25, 2004.	2.4.6, 6.4.3, 6.6.4, 8.1.2, 9.1.2, 15.1.3, 17.2.6, 21.1.10
City of Sunnyvale, John N. Howe, Mayor, May 12, 2004.	2.0.3, 2.1.2, 2.2.5, 2.7.5, 4.1.5, 5.5.9, 6.2.2, 10.1.4, 14.1.5, 16.1.1, 17.1.4, 17.2.7, 17.3.1, 19.1.5
<b>Transit Agencies</b>	
Transbay Joint Powers Authority, Maria Ayerdi, Executive Director, April 21, 2004	22.1.3
BART, Janie L. Layton, Manager, Environmental Compliance, transmitting comments of Roger Avery, BART Engineering Department, May 25, 2004.	6.3.1, 10.1.1, 14.1.1
San Francisco Municipal Railway, Jose Cisneros, Deputy General Manager for Capital Planning & External Affairs, June 3, 2004.	1.1.1, 2.3.1
Santa Clara Valley Transportation Authority (VTA), Roy Molseed, June 30, 2004	2.2.8, 2.7.2, 3.1.5, 4.1.4, 5.5.2, 5.5.4, 6.1.3, 6.2.1, 7.1.3, 17.4.1, 6.6.1, 22.1.2, 6.4.2, 18.1.1, 21.1.1, 21.1.6
<b>Associations and Organizations</b>	
American Lung Association of Santa Clara-San Benito Counties, Terry Trumball, Chapter President, May 3, 2004	7.1.4
Bay Rail Alliance, Margaret Okuzumi, Executive Director, May 25, 2004	2.2.10, 2.4.7, 2.7.7, 5.1.1, 5.3.3, 5.5.10, 6.1.1, 11.1.3, 17.2.8, 23.1.3
Concerned Neighbors of Gilroy, Christopher M. Coté, Executive Director, May 4, 2004.	7.1.5
Felton Gables Homeowners Association, Robert P. Kelly, President, May 25, 2004.	17.2.9
League of Women Voters of San Mateo County, Linda Craig, County Council Coordinator, Judy Orttung, Onnolee Trapp, Transportation Co-chairs, May 1, 2004	2.0.5, 2.2.6, 2.7.9, 3.1.6, 4.1.7, 5.3.6, 5.5.11, 6.1.2, 14.1.6, 17.2.10
Lorelei Homeowners Association, Henry L. Riggs, May 3, 2004	2.3.5, 11.1.4
San Mateo County Transportation Authority CAC, Doris J. Maez, April 30, 2004	2.0.1, 2.2.3, 2.7.3, 3.1.4, 4.1.2, 5.5.3, 6.6.2, 16.2.1, 17.1.1, 19.1.1, 21.1.4
<b>Businesses</b>	
Architecture 21, Michael Kiesling, May 25, 2004	2.2.9, 2.3.3, 2.7.8, 23.1.2
Pacific Gas and Electric Company, Loren Loo, Senior Project Specialist, Land Services, April 22, 2004.	22.1.4
Palo Alto Medical Foundation, Melissa Stai, Manager, Support Services, May 10, 2004	10.1.5
Union Pacific Railroad, Tom Ogee, Chief Engineer–Design, May 25, 2004	2.3.4, 5.3.5, 22.1.5



<b>Comment Contributors on Caltrain Electrification Program Environmental Assessment/ Draft EIR</b>	<b>Comment Number(s)</b>
<b>Individuals</b>	
Abramowitz, Jeff, May 25, 2004	17.4.6
Abramowitz, Marcy, May 25, 2004	23.2.1
Alexander, Alex, May 23, 2004	17.4.7
Anders, Lloyd, May 1, 2004	Comment noted
Billeci, David, May 1, 2004	23.1.5
Blackwell, William, May 17, 2004	5.5.13
Blois, Elizabeth and Marsden, May 25, 2004.	2.2.13, 5.5.14, 6.1.5, 14.1.8, 18.1.2, 23.2.2
Brams, Barry Nelson, May 10, 2004	7.1.10, 23.1.6
Brandt, Adrian, May 21, 2004	7.1.8
Casey, Paul, April 29, 2004	5.5.15
Cho, Charlie, May 17, 2004	23.1.7, 2.2.15, 2.7.13
Cigolie, Andrew, May 4, 2004	2.1.4, 2.3.6, 2.7.12, 5.5.16, 7.1.9, 17.2.11, 21.1.12
Clobes, Todd, May 25, 2004	17.2.12
Dawid, Irvin, May 1, 2004	7.1.11
Deweese, M. Jason, May 4, 2004	23.1.8
Dunning, Connell, May 24, 2004	2.1.1
Engel, Martin, May 25, 2004	2.2.16, 2.6.2, 3.1.7, 6.1.7, 14.1.9, 17.2.13
Farzi, Hamid, May 20, 2004	3.1.8, 5.4.1, 6.1.8, 17.4.8, 23.2.3
Figoni, Bob, May 1, 2004	2.0.6, 2.2.17, 5.2.2
Frazier, Patti, May 25, 2004	5.3.7, 17.4.9, 23.2.4
Frazier, Patti, May 26, 2004	17.2.14
Gammon, Terry, April 27, 2004	5.3.8
Grass, Joseph, May 25, 2004	2.2.18, 14.1.10, 17.4.10, 17.5.1
Griffin, Linda & John, May 18, 2004	17.4.11, 18.1.3
Griffin, Michael, Palo Alto Planning and Transportation Commission, May 3, 2004	23.1.1
Hamilton, Stephen, May 1, 2004	17.2.15
Hanson, Kaaren, May 25, 2004	2.2.19, 14.1.11, 17.4.12, 17.5.2
Hesselink, Lambertus, May 1, 2004	23.1.9
Hutcherson, Philip, April 21, 2004	11.1.6, 23.1.10
Hutchings, Stan, April 21, 2004	5.2.5
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Kaufman, Doug, May 25, 2004	2.2.22, 17.4.13
Kelly, Jim, May 1, 2004	2.2.23, 3.1.10, 6.1.9
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McGraw, Jeff, May 25, 2004	23.1.12
McGrew, Darin, April 6, 2004	2.7.18, 23.1.13
McKeon, Alexander, May 26, 2004	Comment noted
McKeon, Ali Patricia, May 21, 2004	6.1.11, 17.4.15, 23.2.5
Mlynarik, Richard, May 24, 2004	2.2.29, 2.3.7, 2.4.8, 2.5.1, 2.7.19, 5.1.3, 6.2.3, 9.1.3, 19.1.6, 21.1.13, 4.1.8
Neff, Robert, April 29, 2004	11.1.10
Olton, Robert, May 1, 2004	2.1.5, 2.2.31, 5.6.2
Olton, Robert, May 14, 2004	2.2.32, 17.2.19
Orasanu, Judith M., May 25, 2004	2.2.33, 4.1.9, 6.1.12, 7.1.15, 14.1.12, 17.2.20, 17.4.16
Perry, Jack, April 24, 2004	2.7.20, 23.1.14
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Petitjean, Margaret, May 26, 2004	14.1.13
Reis, Win, May 24, 2004	2.2.34
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Scrasen, Walt, April 22, 2004	2.7.22, 2.7.23
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Virnoche, Keith, May 13, 2004	5.3.11
Wasiak, Martin, May 24, 2004	2.3.8, 2.7.25
Whittaker, Ralph and Ann, May 25, 2004	17.4.20
Wong, Francis, May 14, 2004	2.3.10, 2.7.28, 17.2.24
Zanoli, Jill, May 25, 2004	17.4.21
<b>San Francisco Public Meeting Speakers, April 22, 2004</b>	
Bacon, John	2.2.11
Scrasen, Walt	2.7.23
Robinson, William, FP International	2.7.29, 5.3.12, 14.1.14
<b>Sunnyvale Public Meeting Speakers, April 24, 2004</b>	
Baird, Roger	2.7.11, 11.1.5
DeLong, Doug	5.1.2
Guenze, Charles	5.3.9
Holland, Edward	2.2.20
Holland, Joan	3.1.9, 5.2.4

<b>Comment Contributors on Caltrain Electrification Program Environmental Assessment/ Draft EIR</b>	<b>Comment Number(s)</b>
Kishimoto, Yuriko	4.1.6, 16.2.3, 17.4.4
Lysyy, Yevgeniy	2.2.26, 2.7.17, 5.2.8
Lupien, Brooks H.	2.2.28
Okuzumi, Margaret	2.7.6
Perry, Jack	2.7.21
Rajiv, Doug	6.5.2
Stallman, Jim	2.6.3
Wilfley, Brian	2.7.26
Unidentified speaker	5.2.11, 14.1.15
<b>Morgan Hill Public Meeting Speakers, April 28, 2004</b>	
Fallowfield, John	
<b>San Carlos Public Meeting Speakers, May 1, 2004</b>	
Bacon, John	2.1.3, 5.2.1
Bigelow, Jim	2.2.12, 6.1.4, 14.1.7
Brandt, Adrian	7.1.7
Carter, Jeff	2.2.14, 6.1.6
Dawid, Irvin	7.1.12
Duncan, Mark	7.1.13, 11.1.7
Ghose, Gail	2.7.14, 11.1.8
Hamilton, Stephen	17.2.16
Hills, Ernie	5.2.3
Kaiser, Marena	2.2.21
Keith, Jennifer	18.1.4
Kelly, Jim	2.2.24, 7.1.14
Lawrence, Hank	5.2.7, 6.1.10
Lindgren, Art	2.2.25
Lund, Paul	2.2.27, 11.1.9, 17.2.18
Maez, Doris	2.6.1, 3.1.2, 4.1.3, 5.3.4, 17.1.2, 19.1.2, 21.1.5
Maulbetsch, Rosemary	5.2.9, 17.4.14, 18.1.5
Olton, Robert	2.2.30
Perry, Nick	23.1.4
Pierson, Beth	17.2.21
Ringham, Jack	5.5.18, 17.2.22
Trapp, Onnolee	2.0.4, 2.2.7, 2.7.10, 5.5.12, 7.1.6, 21.1.11
Wong, Francis	2.3.9, 2.7.27

## DOCUMENT PURPOSE AND ORGANIZATION

The purpose of the Caltrain Electrification Program EA/EIR is to clearly describe the environmental impacts of electrification (both the benefits and costs) and to summarize the economic costs and benefits of electrification. Caltrain's governing board, the JPB, must combine this information with policy analysis and public input to determine whether the overall benefits of electrification outweigh its costs. The JPB will make this decision in the context of the Caltrain Strategic Plan, *published in 2004* (see general response: Electrification and Caltrain Strategic Plan).

This document presents responses to comments received on the Caltrain Electrification Program's EA/DEIR. The comments are organized by subject matter, and responses are provided to each *comment* or occasionally, similar comments are grouped for a single response. In some instances where there were many similar comments on a single subject, a general response was developed. General responses are presented in this section.

## GENERAL RESPONSES

General responses were prepared on the following subjects:

- Ridership Benefits of Electrification
- Caltrain Electrification Benefits
- Consistency of the Electrification Program with the Caltrain Strategic Plan
- Electrification and Transbay Terminal / Downtown Caltrain Extension Project
- Electrification and High Speed Rail (HSR)
- Overhead Contact System (OCS) and Third Rail Power Distribution Systems
- Electrification Cost/Benefit Analysis
- Prioritization of Grade Separations and the Electrification Program
- Whether to Implement a Minimum Operating Segment of Electrification
- BART as an Alternative to Caltrain Electrification
- Rolling Stock Planning
- Tree Trimming

### I. Ridership Benefits of Electrification

The primary purposes of the Caltrain Electrification Program are to improve train performance, reduce noise, improve regional air quality, and modernize Caltrain. All these benefits would be achieved by electrification. Under electrification there would be a dramatic decrease in air pollutant emissions, a substantial reduction in noise impacts of train operations, a reduction in energy consumption and costs, and real improvements in Caltrain operational efficiency compared to diesel operations (see general response: Caltrain Electrification Benefits).

While increasing ridership is not a main goal of the Electrification Program, patronage modeling results presented in EA/EIR Table 3.15-5 shows that ridership in 2035 will increase by approximately 9% under electrification compared to continued diesel operations. Operating efficiencies under electrification will enable Caltrain to offer additional service cost effectively. These service improvements will likely also increase ridership (similar to the very popular Baby Bullet service).

The EA/EIR ridership analysis is based on a standard patronage modeling process that computes the differences in travel times caused by a service improvement (in this case electrification) and uses this difference to estimate how many trips would be attracted by lower travel times. Under electrification, the travel time improvements would be greatest for local trains with many stops since electrified trains

accelerate and decelerate faster than diesels and therefore would reduce the trip time between stops. Express or limited stop trains would receive less reduction in travel time since they make fewer stops.

Standard patronage modeling cannot easily account for the non-travel-time-related benefits of electrification to prospective riders. For example, the quieter and cleaner electrified trains are expected to attract additional passengers, but it is impossible to quantify this attraction using the traditional transportation modeling process. Also, by reducing noise and improving air quality, electrification has the potential to encourage more transit-oriented development around Caltrain stations than is currently planned. Local land use plans must enable this type of development, however. Several Peninsula communities are developing plans for transit oriented development but until these plans are approved by local city councils they cannot be included in the land use assumptions for transit patronage modeling and it would be speculative to quantify their downstream ridership effects.

Finally, in response to questions about the consistency of ridership projections presented in the Caltrain Electrification EA/EIR and the Transbay Terminal Project EIS/EIR, the patronage modeling results differ because the ridership results presented in the Caltrain Electrification EA/EIR do not include construction of the Caltrain Downtown Extension (since electrification has been evaluated independently of the downtown extension).

## **II. Caltrain Electrification Benefits**

The primary purposes of the Caltrain Electrification Program are to improve train performance, reduce noise, improve regional air quality, and modernize Caltrain. These benefits are outlined below.

Caltrain electrification will reduce noise since noise emanating from the passage of electrified trains is measurably less than diesel operations. Given the substantial increases in Caltrain service that are either under way or planned, the noise reduction brought about through electrification becomes an important consideration for maintaining Peninsula quality of life. Section 3.11 of the EA/EIR describes the noise benefits of electrification.

Caltrain electrification will improve air quality since electric trains are zero emissions vehicles. This will reduce emissions along the Caltrain alignment and translate into positive health benefits.

According to the EA/EIR's air quality analysis, Caltrain electrification will also improve regional air quality. While electrification will create demand for additional electric power thereby increasing emissions from electric power plants, overall energy consumption (and air emissions) would be much less. Electrification would reduce energy consumption by over 62 percent, compared with continued diesel operations, in 2035. Net reductions in criteria air pollutants—even including the emissions that would result from generating the electrical power—would be very substantial. Furthermore, the EA/EIR's air quality analysis is conservative since it assumed that all the electricity consumed by Caltrain would be generated by power plants in the Bay Area. Yet, according to the Bay Area Air Quality Management District (BAAQMD), the Bay Area is a net importer of electricity. It is also likely that some of the electricity consumed by Caltrain would be generated from renewable non-polluting sources. A key reason for improved regional air quality is that emissions from stationary sources (power plants) are much easier to control than emissions from vehicles. Section 3.3 of the EA/EIR describes the air quality benefits of electrification.

Caltrain electrification would increase O&M costs *over the No-Electrification Alternative by about \$4.47 million initially and by about \$2.37 million in 2035* under the Electrified Multiple Unit rolling stock option (O&M costs would be slightly higher for electric locomotive hauled service). This analysis is based on the ratio of costs for electric power to diesel fuel remaining constant (at Summer 2008 levels). *Projecting future electricity and diesel prices is very uncertain, but long-term trends would tend to support diesel fuel increases outpacing electricity price increases.* Section 2.3.3.3 of the EA/EIR describes the impact of electrification on O & M costs.

Caltrain electrification would improve train performance. Electric trains can accelerate faster than diesel trains, thus they help reduce time spent traveling between stations. This reduction in travel time translates into a *projected* increase in ridership of 9%. Electrification would also enable Caltrain

to run longer train consists without degrading speeds. This is a more cost-effective way of increasing capacity in the peak periods than running greater numbers of shorter trains. With electrification, Caltrain would be able to increase capacity while maintaining current schedules and staff levels. Without electrification, Caltrain would need to spend additional funds to construct new track and signal systems to provide the same service levels.

Electrification with *Electric Multiple Unit* (EMU) rolling stock (Caltrain's preferred option) would also provide Caltrain with the flexibility to improve boarding and reduce station dwell times. Currently, the primary factor in longer station dwell times is the limitation imposed by loading through only one door in the gallery cars, which comprise most of Caltrain's passenger cars. Purchasing new EMUs would permit Caltrain to optimize the number of doors for faster boarding, contributing substantially to better overall train performance and reduced travel time on Caltrain. The EMU option also would achieve the best and most efficient train performance of any of the options.

Finally, an electrified Caltrain system would better address Peninsula commuters' vision of an environmentally friendly, fast, comfortable, reliable, and modern rail transit service.

### **III. Consistency of the Electrification Program with the Caltrain Strategic Plan**

In July 2004 the JPB adopted the *Caltrain Strategic Plan 2004-2023*. Caltrain's Strategic Plan presents a blueprint for the future of Caltrain. It describes four future scenarios for Caltrain, and importantly links vision, customer service, operations planning, and investment strategy into a comprehensive approach for change. Furthermore, Caltrain's Strategic Plan outlines a concise and thoughtful approach for developing Caltrain's capital improvement plan, a process for weighing the costs and benefits of projects and ultimately setting priorities.

Electrification is a key component of all five of the Caltrain Strategic Plan's guiding principles. Guiding Principle 1 calls for satisfying passengers and building ridership; electrification would help meet these goals by providing a cleaner and more environmentally friendly service (than diesel trains). Guiding Principle 2 calls for investing wisely in system improvements. The Strategic Plan clearly describes a process for evaluating improvements, such as electrification, in a comprehensive context. Guiding Principle 3 calls for promoting regional connectivity and cooperation with other transportation providers. Electrification would play a key role in meeting this objective by facilitating the extension of Caltrain to the Transbay Terminal, where it will connect with BART, AC Transit, Muni, Golden Gate Transit, high speed rail, and other transit operators in a new multimodal transit center that will be the region's major transportation hub. Guiding Principle 4 calls for partnering with communities and broadening communications with the public. Electrification would assist in achieving this principle by encouraging future transit oriented development and reducing environmental impacts (noise and air pollution). Guiding Principle 5 calls for developing a solid financial foundation that ensures long-term sustainability. Electrification would play a key role in creating an improved public transit service on the Peninsula, reducing energy costs, increasing revenues and stabilizing commitments to the service. Importantly with respect to Guiding Principle 5, the Strategic Plan provides decision makers with a process for assessing these types of financial issues before moving forward with an investment program, rather than making these decisions in a vacuum.

The Electrification Program is prioritized among other Caltrain improvements in accordance with the Strategic Plan. Caltrain's Strategic Plan describes a long term vision that includes grade separations, capacity improvements, electrification, the Caltrain Downtown Extension, and high speed rail, as well as a process for decision-makers to use in prioritizing these improvements and linking them with Caltrain passenger service goals. The Strategic Plan recognizes that setting Caltrain's investment priorities is not simple; the priority of any particular project depends on service levels, funding availability, transportation policy, and environmental goals.

Caltrain's Preferred Alternative, as described in the EA/Final EIR, is to complete electrification by 2015, generally consistent with the Strategic Plan's Build-Out Scenario.

#### **IV. Electrification and Transbay Terminal / Downtown Caltrain Extension Project**

The Caltrain Electrification Program EA/EIR describes the environmental impacts of electrifying the Caltrain line between the Fourth and King Station in San Francisco and *San Jose*. The project consists of the electrical facilities needed for Caltrain operations only between these two points.

As described in Section 1.3.1 of the Caltrain Electrification EA/EIR, the Transbay Terminal / Caltrain Downtown Extension / Redevelopment Project consists of constructing a new multimodal Transbay Terminal, extending Caltrain from the Fourth and King Station to the new Transbay Terminal, and redevelopment of the Transbay Terminal Area. That project's Final EIS/EIR was certified in April 2004. *Construction is expected to be completed in 2015.*

The rail alignment from Caltrain's Fourth and King *Street* Station to the new Transbay Terminal would be underground and trains would need to operate under electrical power on this segment. As part of the Transbay Terminal Project, the same type of electrification proposed for the Caltrain Electrification Program (25 kV 60 Hz ac with overhead contact system power distribution, which is the modern standard for electrified railroads) would be used on the segment from Fourth and King to the Transbay Terminal.

The Caltrain Electrification Program and the Transbay Terminal / Downtown Caltrain Extension / Redevelopment Area project are complementary, but they were developed so that each could be constructed without the other. With the Electrification Program in place from *San Jose* to the 4<sup>th</sup> and King Street *Station* terminus, the Transbay Terminal Project would extend the power supply and OCS distribution facilities into the new terminal. Without the Electrification Program in place, *engineers for the Transbay Terminal project are preparing technical studies to evaluate vehicle alternatives. One of the options under consideration is providing alternate traction power supply facilities and purchase of new dual-mode (electric-diesel) locomotives for use on the segment of the line from the 4<sup>th</sup> and King Street Station into the new terminal. These dual mode locomotives would enable the Downtown Caltrain Extension to operate on electricity in the underground segment from the Transbay Terminal to 4<sup>th</sup> and King, and to operate on diesel fuel for the rest of the Caltrain alignment.*

#### **V. Electrification and High Speed Rail (HSR)**

As stated in the previous general response, the Caltrain Electrification Program EA/EIR describes the environmental impacts of electrifying the Caltrain line between the Fourth and King Station in San Francisco and *San Jose*. The project consists of the electrical facilities needed for Caltrain operations only between these two points.

The California High Speed Rail Project would construct a high speed rail system throughout the state of California. The California High Speed Rail Authority *has completed* a program level environmental analysis of the statewide high speed rail system. That environmental document includes analysis of operating high speed trains in the Caltrain alignment. Should the High Speed Rail Authority decide to pursue the Caltrain alignment for HSR, it will prepare a detailed environmental analysis of the project. (For information on the high speed rail project and program level environmental analysis, please see: [www.cahighspeedrail.ca.gov](http://www.cahighspeedrail.ca.gov).)

The Caltrain Electrification Program has been designed to be generally compatible with the proposed statewide high speed rail project. Statements in the EA/EIR that electrification facilities would be designed "to accommodate" high speed rail service mean that the Caltrain Electrification Program would install the same type of power supply and distribution system as proposed for the HSR service (see general response: OCS and Third Rail Power Distribution Systems). Thus, the proposed Electrification Program would accommodate future development of high speed rail in the Caltrain alignment without any significant overhaul of the electrification system, either traction power supply or OCS distribution.

#### **VI. Overhead Contact System (OCS) and Third Rail Power Distribution Systems**

The Caltrain Electrification Program proposes to use 25 kV single phase 60 Hz alternating current (ac) power delivered to trains by means of an overhead contact system (OCS) as described in

EA/EIR Section 2.3.2. This type of system is used worldwide for new and upgraded railroad systems and is consistent with the proposed California High Speed Rail project.

Several comment contributors recommended third rail power distribution for the Caltrain Electrification Program. Third rail power distribution is an alternative to an OCS that is generally used on heavy rail transit systems (e.g., BART) and in a very small number of commuter rail systems (e.g., Metro North in New York). While third rail power has advantages in some situations (for example, it reduces the height of tunnels and therefore is often used in underground rail alignments), it has several distinct disadvantages.

The main problem with third rail power distribution systems is that they provide low voltage direct current power, which is less efficient for railroad applications than high voltage ac power. Low voltage systems suffer from greater voltage drop problems and, therefore, require more frequent substations – typically at one to 1.25-mile spacing, versus the four- to eight-mile spacing that is proposed for the Caltrain 25 kV ac power system facilities. Providing additional substations would increase capital and operating costs, as well as increase the potential for environmental impacts. Furthermore, the use of low voltage direct current would increase power consumption, raising operating costs and increasing emissions from power generation.

Another critical problem with third rail power systems is that they typically cannot be used by trains traveling at speeds in excess of 75-80 mph, a constraint that would not be acceptable for high speed train operations. This, together with the high power consumption of high speed trains, has resulted in high voltage ac OCS power distribution systems being adopted by most HSR systems throughout the world. While it might be possible to develop special dual distribution compatible train-sets for California's high speed rail system (using third rail power on the Peninsula and OCS elsewhere on the system) this would introduce operational problems for the HSR system and increase costs (both operating and capital).

Finally, third rail power distribution would create several practical problems for rail systems. It makes normal maintenance on the track and track bed more difficult, it imposes design constraints on the rail line (requiring grade separation, right-of-way fencing, and high level platforms to *address the safety hazard* along the route *associated* with the electrified third rail), and it introduces an additional hazard in the event that a train has to be evacuated in an emergency and passengers are required to egress along the alignment.

In summary, after considering the advantages of OCS power distribution and problems associated with third rail power distribution, the Caltrain Electrification Program proposes to move forward with 25 kV 60 Hz ac traction power supplied to an OCS, consistent with worldwide best practices for railroad electrification.

## **VII. Electrification Cost/Benefit Analysis**

The Caltrain Electrification Program is expected to provide many benefits to Caltrain riders, the Peninsula, and the San Francisco Bay Area. These benefits include improved air quality, improved Caltrain service and operational efficiency, reduced noise, reduced energy consumption, and a generally improved environment adjacent to the Caltrain tracks (see general response: Caltrain Electrification Benefits). Furthermore, electrification complements the Caltrain Transbay Terminal Extension and future high speed rail service.

The EA/EIR clearly describes the environmental benefits and impacts and summarizes the economic costs and benefits of electrification. Caltrain's governing board, the JPB, must combine this information with policy analysis and public comment to determine whether the overall benefits of electrification outweigh its costs. The JPB will make this decision in the context of the Caltrain Strategic Plan (see general response: Electrification and Caltrain Strategic Plan). *Although this decision is not specifically made on the basis of a cost-benefit or cost-effectiveness ratio, the decision takes into account the full range of factors that would be included should such a mathematically-based decision format be used.*



## **VIII. Prioritization of Grade Separations and the Electrification Program**

Grade separating Caltrain is an extremely important long-term objective. Grade separation would improve safety (eliminating the potential for accidents at grade crossings), reduce traffic delays caused as trains pass through grade crossings, and eliminate the need for trains to blow their horns at grade crossings. As Caltrain service increases, grade separation becomes even more important.

If the California High Speed Rail Authority selects the Caltrain corridor for high speed trains to serve the Peninsula, then the entire Caltrain alignment would need to be grade separated. While there are examples of high speed trains operating on lines with grade crossings, this is not recommended due to safety, traffic and operational considerations.

Under the Caltrain Strategic Plan's Build-Out Scenario (which includes operation of high speed rail in the corridor), the entire Caltrain alignment would have four tracks and be completely grade separated. This would allow Caltrain to operate 138 daily trains (local and express) and include capacity for high speed rail trains.

A key question raised in several comments is whether to electrify Caltrain in the near future or wait until Caltrain is improved to its ultimate grade-separated alignment before proceeding with electrification. This is a critical policy question for Caltrain's Governing Board, the Joint Powers Board, and is recognized as such in the Caltrain Strategic Plan.

Clearly, all other things being equal, the most cost effective and efficient way to electrify Caltrain is to first construct the ultimate alignment and then electrify the line. This would reduce the amount of work needed to move the OCS as the track alignment was changed or grade separations were constructed. However, as outlined below, there are several reasons why electrifying Caltrain before the ultimate alignment is completed makes sense, and there are techniques that would be used to minimize any wasted effort involved in early electrification.

The most important point is that the Electrification Program will provide environmental benefits to Peninsula communities and operating benefits to Caltrain. The sooner Caltrain is electrified the sooner these benefits will be realized (see general response: Caltrain Electrification Benefits). These benefits should be weighed against any additional costs incurred in relocating the OCS for new track alignments.

Second, over three-quarters of electrification's projected costs are expenses that do not depend on the specific track alignment; these include vehicles, power substations, and maintenance yards. Therefore, even if the entire track alignment were relocated as part of building the ultimate four-track, grade-separated railroad, in the worst case only about one-quarter of the total electrification cost for that segment of the route may be wasted. But such waste would be minimized. Design plans or conceptual plans for the ultimate alignment would be used in the detailed planning for electrification to reduce the amount of additional electrification work needed as the ultimate alignment was completed. In addition, virtually all of the OCS equipment (with the exception of the foundations, OCS conductors and any underground duct banks) can be re-used, thereby further reducing any waste and associated costs.

Third, it is important to stress that the program to construct Caltrain's ultimate alignment is likely to be incremental. Grade separations and additional tracks would be constructed segment by segment based on railroad operating needs and opportunities to partner with other projects. While the ultimate alignment may be a four-track system, there may be segments that can operate using two or three tracks for years, even with the advent of high speed rail service, until funding can be identified for particularly expensive and complicated segments—for example, the tunnels in San Francisco. One of Caltrain's greatest strengths is its ability to be improved incrementally. Service—even high speed service—can be operated on less than the ultimate alignment at less than the ultimate speed, albeit with different operating characteristics, providing important benefits earlier than would be possible if it was necessary to wait for the ultimate alignment to be in place. It is interesting to note, in this respect, that the high speed trains in France (TGV) and Germany (ICE) operate in mixed traffic at slower speeds in their approaches to major city centers and run at high speed only in dedicated corridors once they are clear of the metropolitan areas.

In summary, the question of when to electrify is complex and depends on many variables. The decision cannot be made in a vacuum and must be considered carefully by Caltrain's governing board, as part of the regular capital planning process and in the context of the Caltrain Strategic Plan. The Caltrain Electrification EA/EIR and discussion above present some of the factors that the JPB will consider in making this decision.

## **IX. Whether to Implement a Minimum Operating Segment of Electrification**

Constructing a Minimum Operating Segment (MOS) of the Electrification Program would require major changes in Caltrain service and operating modes. The most likely MOS would cover the route segment between San Francisco and Palo Alto.

Based on the *current* Baby Bullet timetable, a practicable operating scenario could be to operate the electric trains in local all-stop mode between San Francisco and Palo Alto. Diesel-hauled Baby Bullets could continue to operate between San Francisco and San Jose and, in addition, all-stop diesel trains could shuttle between Palo Alto and San Jose/Gilroy. Some diesel trains also could run in limited-stop mode between San Francisco and Palo Alto, then all-stop to San Jose/Gilroy. This latter operating scenario would allow for the greatest number of one-seat rides for southern Caltrain customers. However, some customers, particularly those who would want to ride between Santa Clara County and those stations not served by the limited stop/express services in either San Mateo or San Francisco County, would need to change trains at Palo Alto.

An MOS would require passengers outside the electrified zone to modify their established travel habits, as a consequence of losing their one-seat ride and the need to wait at an intermediate station for their second or third train, which may result in a reduction in ridership.

To provide for these services, moreover, a new interchange and lay-over facility would need to be constructed at Palo Alto with additional tracks and crossovers to facilitate the turn-back moves of both sets of equipment, and to permit storage of emergency standby equipment.

The biggest disadvantage is that constructing an MOS almost invariably creates additional operational issues for the agency and complicates the way in which train services have to be operated, and where and how locomotives or other motive power units are turned and stored and maintained. One new complication for Caltrain would be that, until electrification was extended, the electric locomotives or EMU trains would have to be diesel-hauled from Palo Alto down to the new Lenzen Maintenance Shop in San Jose for all major maintenance tasks. Minor maintenance could still be performed in San Francisco and be provided for at the Palo Alto terminus.

This service model would add to project costs, greatly complicate Caltrain operations, add to passenger delays and possibly decrease ridership by introducing a transfer into the trip for a substantial number of riders. Thus, the idea of an MOS of electrified Caltrain service is neither cost-effective nor operationally viable. Construction of the electrified system and initiation of electrified revenue service may be implemented in a phased manner, but the JPB does not intend to identify or consider a Minimum Operable Segment as part of the Electrification Program EA/EIR process.

## **X. BART as an Alternative to Caltrain Electrification**

The concept of *extending BART versus improving Caltrain service* has been considered in many studies over the last 30 years. *The potential future extension of the BART system down the peninsula to San Jose was addressed in Section 2.4.5, Alternatives Considered and Withdrawn (BART Service in Caltrain Corridor) of the EA/DEIR. For the EA/Final EIR, this section has been expanded in response to several public comments on this topic.*

The formal process of considering strategic investments in an early phase of study and then following up with more detailed environmental studies of particular improvements is helpful to the public and decision-makers. *By first addressing major decisions, such as determining the preferred mode and alignment, the Lead Agency is then able to very clearly focus the environmental analysis on the specific impacts of the particular improvement.* The logic of this approach becomes clearer when one considers the huge range of alternatives that might be called into consideration, if it was necessary to

re-evaluate strategic decisions for each proposed project. For example, if the Electrification Program EA/EIR should consider BART as an alternative, why not also consider bus rapid transit, or a new highway?

Not only is a BART-based alternative inconsistent with the planning leading up to the Caltrain Electrification EA/EIR, but there are also many problems with a BART alternative that would likely cause it to be withdrawn should it be considered formally in the EA/EIR. Most of these problems were identified and considered in the previous strategic-level studies of Peninsula transportation that form the basis for the decision to improve Caltrain in the corridor, rather than replace it by BART. *These are described in Section 2.4.5 of the EA/Final EIR.*

*The idea of circling the Bay with BART to provide an integrated regional transit network is attractive and easy to understand. However, an even better result—a more extensive integrated regional transit network—could be achieved less expensively and more quickly by improving existing transit services (through such projects as Caltrain Electrification) and improving coordination between existing services (such as the new multimodal transit stations in Millbrae and Mountain View). Caltrain's Strategic Plan recognizes the benefits of incrementally improving the existing system and improving coordination between transit operations. As elements of the Strategic Plan are implemented over the coming years, the goal of improved regional transit service will be realized without the need to extend BART along the Peninsula.*

## **XI. Rolling Stock Planning**

As reported in the EA/Final EIR, the Caltrain Electrification Program's preferred alternative consists of completing installation of electrification facilities for the entire Caltrain corridor by 2015 and replacing Caltrain's existing diesel locomotives and passenger cars with new EMU vehicles *sufficient for the San Francisco to San Jose segment*. This schedule will allow Caltrain to purchase the new vehicles at a time when Caltrain's existing vehicles would need to be rehabilitated; thus their replacement would minimize the impact of the new vehicle purchase on Caltrain's financial demands.

If the JPB certifies the environmental document and adopts the preferred project, then staff will begin developing specifications for the new EMU vehicles. Many of the comments received on the Caltrain Electrification Program EA/EIR recommended purchasing new EMUs, since this option would allow Caltrain to improve passenger service and increase operating efficiency. For example, many commenters recommended that new EMUs be designed with multiple doors or low floors to speed boarding operations. These comments will be considered by Caltrain as part of developing specifications for the new EMUs and as Caltrain plans further improvements to the system infrastructure.

JPB currently anticipates *using non-FRA compliant rolling stock (i.e., EMUs) within the corridor. There are currently no production vehicles of this type that satisfy FRA Tier I strength requirements.* Caltrain's new rolling stock must share facilities with freight trains and heavy rail, including Altamont Commuter Express, Amtrak, and future service on the Dumbarton Corridor and to Monterey County.

## **XII. Tree Trimming**

To comply with CPUC clearance requirements, JPB has been trimming trees and other foliage from adjacent properties that lean or hang over into the Caltrain right-of-way and create a potential hazard to safe train operations. Consistent with this on-going maintenance program, it is anticipated that more trees will need to be trimmed *for electrification*, to provide the required safe clearance envelope for OCS poles and wires, than is necessary under current train operations.

An arborist conducted a field survey to provide information on the number, type, condition and age of trees in and adjacent to the Caltrain right-of-way that might encroach into the required safety envelope. The survey shows that the trees were a mix of coast live and valley oaks, Monterey pine, eucalyptus, coast redwood, and other species. Tree age and maturity varied from young saplings to over-mature trees. Conditions of the trees range from excellent to poor. It was noted that many trees are already leaning, *there is evidence of some root instability*, and many Monterey pine trees are nearing the end of their average life span (60-100 years). The arborist recommended that removal of

these trees would be prudent and should be considered. JPB believes that evaluating potentially affected trees on an individual basis to determine the best course of action for each is a better approach.

The JPB is proposing to trim the overhanging trees to provide the necessary safety envelope. No removal of trees on private properties is contemplated. The arborist's recommendation is presented as information to property owners who may want to consider such action. Tree trimming would be accomplished according to arboricultural industry standards.

## **1.0 PURPOSE AND NEED**

### **1.1.1 San Francisco Municipal Railway, Jose Cisneros, Deputy General Manager of Capital Planning & External Affairs, June 3, 2004**

“Page 1-1 The four goals listed as the primary purposes of the program are good, however it seems to us that the ultimate purpose of the Electrification Program is to provide a more desirable service that attracts higher ridership levels. It would be good to have this reflected more prominently in the Purpose section.”

**Response 1.1.1** Although Caltrain electrification will improve train performance and modernize Caltrain which will lead to increased ridership, increasing ridership is not one of the primary purposes of the Electrification Program. The primary purposes are to: improve regional air quality, reduce train operation noise (compared with continued diesel operations), improve train performance, and modernize the service.

Please see general responses: Ridership Benefits of Electrification and Caltrain Electrification Benefits for more information.

## **2.0 PROJECT ALTERNATIVES AND OPTIONS**

This category of comments is organized according to the alternatives and options presented in the environmental document, as follows: No-Electrification (or No-Project) Alternative, Electrification Program Alternative (including Overhead Contact System, Traction Power Stations, and Overbridge Protection Barriers), Propulsion Options, and Rolling Stock Options.

### **2.0.1 San Mateo County Transportation Authority CAC, Doris J. Maez, April 30, 2004**

“Alternatives Not Included

“Clean” diesel and liquified natural gas (LNG) were the least expensive of the alternative train propulsion options considered, but were rejected because they did not address the basic project purpose to electrify the Caltrain line or meet the project purpose to realize Peninsula commuters’ vision of a modernized commuter railroad.” (emphasis added) (p. 2-51, Section 2.4.1). These alternative fuels would achieve similar improvements in air quality at lower cost but their rejection is weakly based on a “vision of a modernized...railroad” that is not substantiated with any supporting data. The Joint Powers Board would be ill advised to accept this EA/DEIR that does not include this alternative fuel.”

**Response 2.0.1** Clean diesel and liquefied natural gas (LNG) both offer environmental benefits and were considered as alternative propulsion options with electrification in the EA/EIR. They were subsequently withdrawn from further consideration for the reasons cited by the comment contributor—and for one other important reason, as explained in Section 2.4.1, Propulsion Using Clean Diesel or Liquefied Natural Gas. Neither clean diesel nor LNG would accommodate future California high speed rail in the Caltrain corridor. The 25 kV single phase 60 Hz alternating current (ac) system envisioned for the Caltrain Electrification Program is the current state of the art in railroad electrification used throughout the world for new and upgraded railroad systems. This power supply and distribution system and voltage are compatible with the requirements for HSR and would accommodate future development of high speed rail in the Caltrain corridor without any substantial overhaul of electrification system elements. *With passage of the high speed rail bond issue on the November, 2008 ballot, it is anticipated that the California High Speed Rail Authority will decide whether and where to implement HSR soon thereafter and that implementation of a “starter” line could occur within the 20-year planning horizon.* If Caltrain were to purchase incompatible clean diesel or LNG locomotives near-term, these locomotives would serve only a fraction of their service life, and Caltrain could not recover their large up-front capital costs by selling off this (even lightly

used) equipment. Also, the costs to implement electrified service would increase over time. Considering these factors, it makes sense to dismiss further consideration of these alternative propulsion options and move ahead with electrification as the propulsion mode of choice.

#### **2.0.2 City of Mountain View, Matt Pear, Mayor, May 18, 2004**

"Another issue of note is the range of alternatives, specifically the omission of the clean diesel engine alternative. Considering the cost of electrification, clean diesel engines should be considered if funding is not secured or is delayed. Clean diesel engines could be purchased as older diesel locomotives need replacement or overhaul, acting as an interim measure to address air quality issues."

**Response 2.0.2** Please see response 2.0.1. *In the absence of better options*, JPB could purchase clean diesels as the appropriate replacements for their continuing diesel fleet. These vehicles are becoming the norm in diesel locomotive technology and shortly will be all that is available for new purchases. Note that while these vehicles are much cleaner than older diesel locomotives, they still emit air pollutants, while electric locomotives are rated as zero emissions vehicles.

#### **2.0.3 City of Sunnyvale, John Howe, Mayor, May 12, 2004**

"The option to extend BART shall also be considered as a reasonable alternative. BART has already reached south to Millbrae. BART is also under preliminary design to San Jose and up to the City of Santa Clara, almost to Sunnyvale. This was after Santa Clara County voters recently endorsed BART development. So the remaining gap in BART is much reduced since the last study of its extension to the Peninsula. The level of investment in Caltrain electrification will likely by policy and public opinion preclude any investment to extend BART on the Peninsula. The FEIR shall include a discussion of extension of BART as an alternative for providing the benefits attributed to electrification, in order to adequately and comprehensively inform decision makers and the public for this major reconfiguration of the Peninsula rail service."

**Response 2.0.3** Please see general response: BART as an Alternative to Caltrain Electrification

#### **2.0.4 League of Women Voters, Onnolee Trapp, San Carlos Hearing Speaker, May 1, 2004**

"...At the September 2000 scoping meeting, it was requested to include consideration BART as an alternative electric service. There is indirect reference to BART-type of operation in this EIR, third rail as one of the alternatives considered and withdrawn, however, you did not respond to the scoping meeting request to evaluate BART as an alternative. This is a short coming of this document. Primary purpose in this document is that we modernize Caltrain. This comes across as an image issue and not a technology issue."

**Response 2.0.4** Please see general response: BART as an Alternative to Caltrain Electrification.

#### **2.0.5 League of Women Voters of San Mateo County, Linda Craig, County Council Coordinator, Judy Orttung, Onnolee Trapp, Transportation Co-chairs, May 1, 2004**

"At the September 2000 Scoping meeting in San Carlos, there were requests from the audience for inclusion of BART as an alternative electric service. Section 2.4 discusses Alternatives Considered and Withdrawn; 2.4.4 discusses Third Rail or Underground, which describes Third Rail "as used in the 1000 V DC BART system." This discussion is only an indirect comparison to BART; there is no direct analysis of BART as an alternative, as requested."

**Response 2.0.5** Please see general response: BART as an Alternative to Caltrain Electrification.

## **2.0.6 Bob Figoni, May 1, 2004**

"3. Any suggestion of extending BART down the westside from Millbrae to San Jose should be permanently discarded."

**Response 2.0.6** Please see general response: BART as an Alternative to Caltrain Electrification.

## **2.1 NO-ELECTRIFICATION (NO-PROJECT) ALTERNATIVE**

### **2.1.1 U.S. Environmental Protection Agency, Lisa B. Hanf, Manager, Federal Activities Office, May 25, 2004**

"The U.S. Environmental Protection Agency (EPA) has reviewed the above-referenced document pursuant to the National Environmental Policy Act (NEPA), Council on Environmental Quality (CEQ) regulations (40 CFR Parts 1500-1508), and Section 309 of the Clean Air Act. EPA appreciates the Federal Transit Administration's (FTA) efforts to solicit our input on this project. Our detailed comments are enclosed.

"EPA is generally supportive of projects like the Caltrain Electrification Program that have the potential to reduce emissions resulting from diesel engines. Our attached recommendations focus on several points that would inform the assessment of environmental impacts from the proposed project and include: (1) disclosing the direct, indirect, and cumulative impacts associated with new road development, (2) identifying the potential indirect impacts to water resources, and (3) analyzing cumulative impacts on the local and regional energy demand.

"Additional comments are provided regarding integration with other rail improvements, invasive species management, air quality impacts, and proposed mitigation commitments.

"We appreciate the opportunity to review this Environmental Assessment/Draft Environmental Impact Report (EA/DEIR). When the Final EA is released for public review, please send two copies to the address above (mail code: CMD-2). If you have any questions, please contact me or Connell Dunning, the lead reviewer for this project. Connell can be reached at (415) 947-4161 or [dunning.connell@epa.gov](mailto:dunning.connell@epa.gov)."

**Response 2.1.1** Caltrain acknowledges EPA's recognition of the Electrification Program's potential to reduce air pollutant emissions, as reported in Section 3.3.2.3 and especially Tables 3.3-3, and 3.3-4 of the EA/EIR. Two copies of the Final EA will be transmitted to EPA; the EA/DEIR Distribution List has been revised to include the appropriate mail code. Responses to EPA's other recommendations as presented in their attachment are provided in their respective sections of this volume. Table 1 at the front of this volume provides cross references to each of the comments of each comment contributor.

### **2.1.2 City of Sunnyvale, John Howe, Mayor, May 12, 2004**

"...Caltrain Improvement Priorities: The City of Sunnyvale, other cities, Caltrain riders and the public (and high-speed rail also) might be better served if the monies contemplated to be spent on this project were instead applied to an accelerated program of full grade separation along the line. This will address current and anticipated train operation and traffic issues at grade crossings; address train and crossing noise issues both current and anticipated; and best facilitate future high speed rail. At a minimum, grade separation and accommodation of future high speed rail shall be accomplished concurrent with electrification."

"Thank you very much for your consideration, please contact Jack Witthaus, Transportation and Traffic Manager, with any questions at (408)730-7330 or [jwitthaus@ci.sunnyvale.ca.us](mailto:jwitthaus@ci.sunnyvale.ca.us)."

**Response 2.1.2** The Caltrain Electrification Program EA/EIR describes and evaluates only those elements needed to provide electrified Caltrain service, although the project would be designed to allow future high speed trains to share tracks in the Caltrain corridor.

Please see general responses: Electrification and High Speed Rail and Prioritization of Grade Separations and the Electrification Program.

#### **2.1.3 John Bacon, San Carlos Hearing Speaker, May 1, 2004**

"Having grown up in the Chicago area, I can really appreciate how rail technology can be effective, but not in this locale. I doubt if it is appropriate for this area. For example, cost effectiveness: \$600 million including purchase of 25 new electric locomotives, which is seven times the cost of all new diesels. If additional 4,100 people riders using system every day, the capital cost is \$180,000/person, per additional new rider. To put that in perspective, BART's highest estimate was \$20 billion for 300,000 riders, which is \$67,000 capital cost per rider. In the 20s and 30s, electrification was able to save money, but that was compared to steam engines, not modern diesels. With modern diesel engines, it's not appropriate to go to electrification."

**Response 2.1.3** The comment suggests that electrification is not cost effective given the projected increase in ridership. Caltrain electrification has many benefits in addition to increasing ridership (see general response: Caltrain Electrification Benefits). The JPB will consider the costs and benefits of electrification to determine whether to proceed with the project, *but they will not be expressed as a cost/benefit ratio* (see general responses: Electrification Cost/Benefit Analysis and Prioritization of Grade Separations and the Electrification Program).

#### **2.1.4 Andrew Cigolie, May 4, 2004**

"As someone said on Saturday, the whole thrust of this EDR and program is assuming that electrification is what needs to happen. I would like to see a cost/benefit analysis of spending the same amount of money (or less) on improvements to the current operations (e.g., adding more trains, using shorter trains perhaps at times, etc.). I believe there are some viable options in spending the funds on improvements on the current system that maybe a better use of the funds."

"There should be analysis around spending the funds to grade separate the current line and timing/safety improvements that would be achieved. This could allow some trains to run faster perhaps which helps the timing while reducing the number of accidents/deaths that occur."

"...I certainly can be convinced the electrification is the way to go, but there needs to be more cost/benefit analysis done to truly determine this is the best use of the funds. Basically, I would add the approach that if Caltrain had the \$500M to \$800M of funds to either electrify the line or do anything it else, electrification is still the best use of the funds."

**Response 2.1.4** One of the chief benefits of electrification is that it enables Caltrain to run longer trains without degrading speeds. This is a cost-effective way of serving more peak period riders than running more and shorter trains. The JPB will use this and other results of the Caltrain Electrification EA/EIR to help evaluate the costs and benefits of electrification compared to other potential investments. Please see the general responses: Electrification Cost/Benefit Analysis and Prioritization of Grade Separations and the Electrification Program for more information on this process.

#### **2.1.5 Robert Olton, May 1, 2004**

"We oppose the Caltrain Electrification Program because:

"...The same dollars could be used instead to extend Caltrain to San Francisco/Transbay Terminal which would increase ridership."

**Response 2.1.5** Comment noted. Please see general response: Electrification and Transbay Terminal / Caltrain Downtown Extension Project.



### 2.1.6 Jerry Secrest, May 12, 2004

"I propose Caltrain put the Electrification Program on hold and pursue a program to significantly cut riders travel time door to door. Cutting travel time would increase ridership and increase the Caltrain service value. Cutting door to door travel time may increase revenue and operating margin.

"The Electrification Program needs to be put on hold as it does not significantly improve service but costs a minimum of 600 million dollars. The program does improve air quality along the Caltrain route but does not in the region as the electricity needs to be generated elsewhere. Certainly, reducing noise along the route is a program benefit. Electrification is intended to improve the Caltrain image, this is doubtful if the program does not improve value to users.

"The alternative to the Electrification Program is a project to improve the door to door time for most riders. There are several ways to improve door to door time. These can be evaluated and implemented for much less money than electrification. One possible way to achieve shorter door to door time is a coordinated mixed transit system of on-line computers, vans and trains. Here a possible sequence a rider might use to go from a home or office on the peninsula to a home or office in San Francisco:

"The rider goes to the Caltrain webpage and inputs the starting and endpoints for their trip with the desired time.

"Caltrain matches the request with the train schedule and available van seat(s) at both ends. The rider accepts the schedule.

"The user is given a reservation, charged via a credit or debit card, and a ticket is printed out on their computer.

"At the appropriate time, Caltrain dispatches a van to pick up the rider and other riders in the same area using the same train.

"The van picks up riders and delivers them to the Caltrain station.

"The train is boarded and the user goes to their destination station.

"The rider uses information on the ticket to board a specific van at the destination terminal.

"The van delivers the rider to the destination door.

"The technology suggested here is available and is being used today to make airline reservations, route robots through warehouse, and make purchases on the web.

"I strongly suggest that Caltrain broaden their view to include technology outside of engines and cars to make improvements in service and value to their riders. After the door to door improvements are made, Caltrain can work on reducing train time. One possibility is a hybrid combustion-electric system that does not require overhead electrical lines."

**Response 2.1.6** Electrification is one of several service improvements that the JPB is considering to increase Caltrain ridership and service value. These various improvement strategies will be considered in the context of Caltrain's 2004-2023 Strategic Plan *and the Caltrain 2025 Program* to develop a cohesive program designed to achieve these objectives.

Electrification would improve both local and regional air quality. The reductions in pollutant burdens with the Electrification Program that are reported in Section 3.3.2, Air Quality Impacts, of the EA/EIR, include the pollutants emitted during generation of the electric power needed to run the trains. Two reasons emissions are reduced under electrification are that pollution from stationary sources (the electrical plants that generate electricity for Caltrain) is easier to control than emissions from vehicles (diesel locomotives), and secondly, a portion of the electricity used by Caltrain will be from renewable sources.

The suggestion of a service based on computerized dispatching of vans to shuttle passengers to and from the trains is an interesting strategic concept, but not directly applicable to the environmental

analysis for the Electrification Program. This environmental analysis is designed to provide Caltrain's governing board with information needed to determine the benefits and impacts of electrification in the context of other improvements to Caltrain that could similarly improve air quality, reduce operating noise, enhance train performance, and modernize Caltrain. The governing board and regional transportation agencies do consider ideas like computer dispatched vans as an alternative to traditional transit service, but have so far determined that for economic and efficiency reasons, these types of systems are best integrated into a larger transit network. A good example is the shuttle buses that meet trains at Caltrain stations along the Peninsula. Thus, while the idea is a good one, it would not be appropriate to include a detailed analysis of it in this EA/EIR.

## **2.2 ELECTRIFICATION PROGRAM ALTERNATIVE**

### **2.2.1 Centers for Disease Control and Prevention (CDC), Department of Health & Human Services, Public Health Service, Paul Joe, May 26, 2004**

"Thank you for sending us a copy of the Environmental Assessment/Draft Environmental Impact Report for the Caltrain Electrification Program. We understand that this project would convert Caltrain from diesel-hauled trains and would install some 180 to 200 single track miles of overhead contact system and approximately 13 traction power station facilities for the distribution of electrical power to the electric rolling stock. We are responding on behalf of the Department of Health and Human Services (DHHS), U.S. Public Health Service.

"We have reviewed this document for potential health and safety impacts on human populations and we believe that these impacts were adequately addressed. We believe the project will result in positive health benefits and improved transportation patterns within the area."

**Response 2.2.1** Caltrain acknowledges CDC's concurrence that the Electrification Program would have health benefits and offers improved transportation facilities in comparison with continued diesel operations. Thank you for your review and conclusion that impacts on human health and safety are adequately addressed in the EA/DEIR.

### **2.2.2 Bay Area Air Quality Management District (BAAQMD), Jack P. Broadbent, Executive Officer/APCO, May 25, 2004**

"Bay Area Air Quality Management District (BAAQMD) staff has received the Environmental Assessment/Draft Environmental Impact Report (EA/DEIR) for the proposed Caltrain Electrification Program. The proposed project would convert Caltrain from diesel-hauled to electric-hauled trains and would install between 180-200 single-track miles of overhead contact system and approximately 13 traction power station facilities on the 77-mile Caltrain corridor from San Francisco to Gilroy.

"The Bay Area is currently a non-attainment area for national and state ambient air quality standards for ground level ozone and state standards for particulate matter. Since motor vehicles constitute the largest source of air pollution in the Bay Area, the District has a strong interest in promoting alternative modes of transportation. Because the Caltrain Electrification Program is such a substantial transportation investment, it is essential that the project be planned and operated to maximize its public benefits, including air quality benefits. We have reviewed the EA/DEIR, and we are providing comments on the air quality aspects of the proposed project.

"We support the SamTrans/Peninsula Joint Powers Board's goals for the project, especially the objective to improve regional air quality (Summary Purpose and Need, p. S-1). We agree that an electrified Caltrain system will have multiple air quality benefits including: 1) much lower air pollution emissions from train propulsion compared to existing diesel locomotives; and 2) an improved, more efficient Caltrain system that will result in increased transit ridership in the corridor, thereby reducing automobile trips and emissions. Therefore, we are highly supportive of this project and encourage your agency to begin implementation as soon as practicably possible.

“...We understand that the Caltrain Electrification Program is a separate project from the proposed Transbay Terminal/Caltrain Extension and the Californian High Speed Rail projects. However, we urge your agency to continue coordinating the Caltrain Electrification Program with these related major transportation projects to ensure compatible infrastructure throughout the corridor.”

“...If you have any questions regarding these comments, please contact Suzanne Bourguignon, Environmental Planner, at (415) 749-5093.”

**Response 2.2.2** Caltrain acknowledges BAAQMD's recognition that the Electrification Program would have multiple air quality benefits. Responses to other comments related to air quality are provided in Section 7.0 of this volume. We appreciate BAAQMD's concern regarding continuing coordination with the Caltrain Downtown Extension and High Speed Rail Projects to ensure compatibility of infrastructure throughout the corridor. We agree that such coordination is essential to ensure the maximum mutual benefit as Caltrain undertakes any improvements within its corridor. Coordination has already begun and will continue throughout implementation of the Caltrain Strategic Plan, the Electrification Program, and the Downtown Extension Project. It is anticipated that the coordination of electrification design with the High Speed Rail project will intensify *with passage of* the high speed rail bond issue in November, 2008.

### **2.2.3 San Mateo County Transportation Authority CAC, Doris J. Maez, April 30, 2004**

“Thank you for the opportunity to comment on the Caltrain Electrification EA/DEIR dated April 2004. In my opinion, the document does not make a compelling case for electrification. True, there are air quality benefits due to reductions in energy use, slight improvements in travel times, and minor increases in ridership, but do those benefits outweigh the high costs, the visual clutter along 80 miles of corridor, the disruption of service during construction, and the construction impacts on businesses and residences along the corridor? Increased level of service can be achieved without electrification, alternatives such as LNG or “clean” diesel are available that can achieve the air quality improvements (Section 2.4.1, p. 2-51), and the major noise impact of train horns and crossing bells can be reduced through a systematic reduction in the number of grade crossings on the corridor.

“...Improving the appearance of Caltrain to potential consumers has long been suggested as a means of increasing ridership” (p.1-13, Section 1.24). The reference for this statement dates to a thesis written in 1972, over 30 years ago, before JPB took over train operation and improved service. It is a stretch to justify electrification as a means of improving the image of train travel. Comfort, safety, reliability of service, connectivity, cost, and convenience are far more powerful incentives to users.”

#### **“...Conclusion**

“In conclusion, the Electrification EA/DEIR does not present a strong case for Electrification of the Caltrain line. The weak arguments for improved “image”, the rejection of plausible alternatives, meager improvements in ridership and travel time, downplaying the visual and construction impacts on businesses and residents located near the line, and high costs are compelling reasons to revisit the policy decision to implement electrification of the line.”

**Response 2.2.3** The air quality improvements, energy conservation, noise reduction, enhanced train performance, and travel time savings/ridership inducement benefits of the Caltrain Electrification Program would be substantial. While electrification is not responsible for the increase in train levels and Baby Bullet service, electrification would improve service levels and efficiency by enabling longer peak-period train consists without degrading speeds. This enables Caltrain to expand peak-period capacity without the costs of additional staff. Increasing ridership is not a primary purpose of the Electrification Program; nonetheless, the program is expected to attract a measurable increase in ridership. Please see general responses: Caltrain Electrification Benefits and Ridership Benefits of Electrification.

Installing overhead contact system infrastructure in the Caltrain corridor would introduce new visual elements, but it should be emphasized that the Electrification Program proposes to construct poles and wires in an existing, active freight and passenger rail corridor that pre-dates most of the

surrounding urban development. These elements would be generally consistent with the visual quality of the existing railroad corridor, where transportation infrastructure is a familiar feature of the general scene. As reported in EA/EIR Section 3.1.2, Visual/Aesthetic Impacts, Electrification Program infrastructure would alter views from residential and business locations throughout the corridor toward the trains, as well as the views of Caltrain riders, but it would not obscure scenic views or vistas because, by and large, these types of views are not presently available.

As described in EA/EIR Section 4.1, Construction Staging and Methods, while construction of the electrification infrastructure would take approximately three years and while several corridor segments could be under construction simultaneously, in general, construction activities would occur at different locations during different periods. Furthermore, it should be possible to minimize construction impacts on service by taking advantage of Caltrain's new bi-directional operational ability (added as part of the Baby Bullet Project) and to perform other work at night. Thus it is expected that construction disruptions *would* be dramatically reduced from that required to install the additional tracks needed for the Baby Bullet express service.

The *estimated* \$1,000 million (2008 dollars) initial capital cost of the Electrification Program is not negligible, but it should be emphasized that rolling stock costs account for an increasing share of total capital costs, depending on the rolling stock option selected, while the cost of the non-rolling stock elements of the program is fixed across all options at *an estimated* \$600 million. Implementing a clean diesel or liquefied natural gas alternative would also require a high-cost initial rolling stock purchase. And while either of these options may achieve similar air quality benefits to electrification, neither option would achieve the energy conservation savings, noise reduction, or enhanced train performance benefits of electrification. Also, neither clean diesel nor liquefied natural gas propulsion would be compatible with future high speed rail operations.

The JPB must weigh the costs and benefits of electrification in setting its capital improvement spending priorities. The Caltrain Electrification Project EA/EIR presents environmental data that will help the JPB make these decisions (please see general response: Electrification Cost/Benefit Analysis).

#### **2.2.4 City of Brisbane, Michael Barnes, Mayor, May 12, 2004**

"Thank you for the opportunity to comment on the environmental document for this project. The City Council considered the document at their meeting of May 3, 2004 and directed staff to prepare this letter.

"It is clear from the EA that the project will have a number potentially significant impacts that can, and should, be mitigated. In addition, we note several clearly beneficial impacts from the project including a reduction in energy consumption, a substantial benefit to air quality, a reduction in noise and, possible (depending on the rolling stock option chosen), vibration impacts on surrounding homes and a decrease in traffic congestion should the projected increase in Caltrain ridership take place. For these reasons, the City of Brisbane supports the project."

**Response 2.2.4** Caltrain acknowledges the City of Brisbane's recognition that the Caltrain Electrification Program would have a variety of beneficial effects as well as some adverse impacts that would be mitigated as reported in the EA/EIR.

#### **2.2.5 City of Sunnyvale, John Howe, Mayor, May 12, 2004**

"At its May 11, 2004 meeting, the Sunnyvale City Council considered policy on the electrification of Caltrain."

"...Public Perception: On Page S-3, third bullet, is the thesis that: "An electrified Caltrain would better address Peninsula commuters' vision of an environmentally friendly, fast, reliable service. This will also stimulate ridership. Additionally, an electrified Caltrain system would set the stage for an expanded regional electric express and, potentially for a statewide high-speed rail service..."

"On Page 3-130 in the section on ridership is the contention that: "...a major deficiency of the current Caltrain service has been its image of an outmoded operation that dates back to the freight rail-oriented Southern Pacific. The continued use of diesel locomotives...has been an important factor in sustaining this image... a factor not addressed in ridership models. Electrifying the Caltrain service would increase its consumer appeal...The Electrification Program would more closely meet Caltrain riders' vision of an updated, clean, high-tech type Caltrain."

"The above statements are best characterized as promotional spin; they certainly are not borne out by any analysis of the report, and are actually in conflict with some of the report conclusions regarding travel time and ridership, and also largely in conflict with reality. There was no rider or other attitudinal study undertaken to ascertain peoples' views or "vision" or any determination of "consumer appeal" on whether diesel locomotives are "outmoded" or the like. Case in point, the new Caltrain diesels are produced by designers that take into account market appeal in industrial design and appearance and are very much more modern looking than any of the boxy electric locomotives or heavy electric MUs on the market.

"On the other hand, a most common public complaint about light rail and similar projects are the unsightly overhead wires. Electric trains are not necessarily "high-tech" either; they date back to the 1880's and predate the diesel engine. Diesel-powered Caltrain has always been reliable with an excellent on-time record, and even the old, much reviled Southern Pacific rightly took pride in the punctual schedule performance of its Peninsula trains. But there is no discussion in the report (Section 3.10) about the consequences of local or general power failures on the reliability of an electrified Caltrain.

"Accordingly, the above statements of the report appear to reflect promotion of a political agenda, and as such do not have a place in a technical study. Statements, such as those above referenced, which do not have a basis in objective fact as it relates to the environmental impacts of electrification shall be omitted from the FEIR."

**Response 2.2.5** Upgrading Caltrain to a clean, quiet, environmentally friendly, modern service is a stated primary goal of the Electrification Program as expressed in EA/EIR Section 1.1. As part of the early public coordination meetings for the electrification program, Caltrain requested the public to express their "vision" for Caltrain service improvements. Numerous comment contributors evoked the image of a European-style electric train service that would be clean and quiet and that would reflect their environmental protection values in contrast to the diesel service. Marketing of transportation services or any other product or service acknowledges that image is extremely important in generating consumer response. It is anticipated that these characteristics of an electrified train service will attract additional riders—even if it is not possible to quantify this benefit through the use of typical ridership analysis and projection tools.

Regarding the reliability of diesel versus electric trains, it is true that the electric trains could be shut down during a power outage, however, each traction power facility would have two sources of electricity supply and would be tapping into the highly reliable 115 kV high voltage utility transmission network, rather than into one of the less reliable, lower voltage distribution systems, and outages on the high voltage network are extremely rare. The analysis presented in EA/EIR Section 3.10 does address the sources and availability of electrical power for Caltrain, the California energy crisis, ongoing and planned improvements and expansions of energy generation and distribution capabilities, and other efforts to ensure adequate electrical energy supplies for the foreseeable future. Moreover, Caltrain Electrification would result in a net savings of propulsion energy. It should be noted that diesel trains have not proven themselves to be trouble-free. They are subject to mechanical breakdowns that occur much more frequently than the once every few years that has been the frequency of past brown-outs.

**2.2.6 League of Women Voters of San Mateo County, Linda Craig, County Council Coordinator, Judy Orttung, Onnolee Trapp, Transportation Co-chairs, May 1, 2004**

"Caltrain is an important link in Bay Area multi-modal transit networks. As such, it must provide service that is efficient, convenient, cost-effective, equitable, and safe. It must also be planned in concert with land use and viable alternatives to reduce vehicle miles traveled and single-occupant vehicle use. There must be a variety of funding sources available for both capital and operating costs.

"We have studied the EA/DEIR with these criteria in mind. Since the system is already in place and operating with diesel power, the Primary Purposes of the Electrification Program must be demonstrated to be workable and effective. There must be substantial measurable improvements beyond the improvements planned for No-Project.

"The document makes a good case for several benefits resulting from electrification. Incontestably, the biggest and most important advantage of electrification is the reduction in energy use and consequent improvement in regional air quality. The calculations are impressive and convincing, if they accurately represent the technology that will be available for electrification compared to diesel or other fuels at the time of implementation.

"However, we are disappointed by the lack of comparative information in this document, the inconsistencies between this document, the Transbay Terminal EIR, and the Caltrain Strategic Plan for 2004-2023, and the apparent very limited improvements in travel time and ridership induced by electrification compared to No-Project."

**"...Cost/Benefit Analysis**

"Caltrain must weigh the benefits of reduced energy cost and air pollution against the cost of very small increases in ridership and very small reductions in travel time if the information in the EA/DEIR is believed to be adequate. We believe that a more thorough analysis is needed, including coordination and reconciliation with data in the Transbay Terminal EIR and the Caltrain Strategic Plan. The benefits of the Electrification program must be substantial, clearly defined, and permanent. The negative impacts caused by construction will be temporary, but not all easily mitigated. Long-term, cumulative impacts DO exist. The Final EA/EIR must convincingly demonstrate that the enormous monetary cost of Electrification will be justified by large benefits for passengers, neighborhoods, businesses, the economy, energy consumption, travel time, air quality, and compatibility with other regional transportation systems, as well as providing a more modern type of transit vehicle.

"We request that you address our concerns in the development of the Final EA/EIR. We want to see the most cost-effective use of scarce transit funding resources. We support the use of electric energy instead of diesel because of its projected lower energy usage and its beneficial impact on air quality. These benefits, however, are not accompanied by reduced travel times, which would directly benefit Caltrain passengers and improve ridership. More study is required to determine how to further reduce travel time and how to attract more riders so that the cost of the Electrification Program can be considered cost-effective as well as energy efficient."

**Response 2.2.6** Please see general responses: Electrification and Transbay Terminal / Downtown Extension Project and Consistency of the Electrification Program with the Caltrain Strategic Plan for information on coordination between these important studies.

Please see general responses: Ridership Benefits of Electrification and Caltrain Electrification Benefits for more information on ridership increases from electrification.

Please see general responses: Electrification Cost / Benefit Analysis and Prioritization of Grade Separations and Electrification for a description of how the JPB will weigh the costs and benefits of electrification in setting the most cost-effective use of scarce transit funds.

### **2.2.7 League of Women Voters, Onnolee Trapp, San Carlos Hearing Speaker, May 1, 2004**

“...We need responsible cost benefit analysis. We need to weigh the benefits of reduced energy consumption and air quality against the very small ridership gains and very small decreases in travel time savings. We need more thorough analysis and coordination and reconciliation with the Transbay Terminal EIR and Caltrain Strategic Plan. The benefits of electrification must be substantial, clearly defined and permanent. The Final EIR must convincingly demonstrate that the enormous monetary cost will be justified by benefits to passengers, neighborhoods, businesses, economy, and is compatible with other regional transit systems and provide modern types of transportation.”

**Response 2.2.7** Please see response 2.2.6 and the general responses it refers to.

### **2.2.8 Santa Clara VTA, Roy Molseed, Sr., June 30, 2004**

“Page S-20, Section S.8, page 1-15 and page 2-44: Union Pacific Railroad (UP) will need to approve electrification of their right of way from Tamien to Gilroy segment. If not successful, what are the resulting changes in operating plans, costs and benefits associated with electrifying only from San Francisco to San Jose, and operating diesel trains between San Jose and Gilroy. Would Caltrain operate and maintain two separate fleets of locomotives and force transfers at Diridon station from diesel to electric trains.”

**Response 2.2.8** *Caltrain is no longer developing plans to electrify the segment between San Jose Diridon and Gilroy, therefore JPB has eliminated impact analyses for this segment from the EA/Final EIR. See Section 2.4.7 of the document for additional explanation in this regard. Caltrain plans to retain a small fleet of diesel locomotives for providing diesel shuttle service between Gilroy and San Jose. Passengers would have to transfer at Diridon Station from diesel to electric trains. Updated capital and operations and maintenance costs for both the San Francisco to San Jose segment are provided in Subsection 2.3.3.3 of the EA/Final EIR.*

### **2.2.9 Architecture 21, Michael Kiesling, May 25, 2004**

“The EIR should look at a Minimum Operable Scenario that acknowledges the financial commitments to the project. Specifically, the EIR should discuss an option that electrifies south only to Palo Alto. This would reduce the initial project costs significantly by eliminating two of the three Primary Substations and their associated Paralleling Stations and Switching Stations. It would also significantly reduce initial rolling stock acquisition costs, and approximately half of the track-miles of OCS. (Electrified equipment could be hauled to the CEMOF in Santa Clara by diesel locomotives for heavy maintenance, with light maintenance performed at the San Francisco terminal. Existing Caltrain practices now require deadheading equipment to Oakland or Roseville for the same maintenance, the deadheading from Palo Alto to San Jose is a small fraction of the distance.)

“Electrification to Gilroy should be eliminated. Instead, service patterns that bring diesel-hauled Gilroy trains to a point north of San Jose to blend the electric and non-electric services should be assumed.

“The headways for service south of San Jose, combined with the UPRR ownership of the ROW and the FRA-compatibility issues make the electrification of non-JPB owned ROW very expensive and problematic.

“Funding would be better spent on operational improvements and upgrades to the Gilroy service, but even far-distant service levels do not come anywhere close to warranting electrification south of San Jose.”

**Response 2.2.9** Please see general response: Whether to Implement a Minimum Operating Segment of Electrification.

### **2.2.10 Bay Rail Alliance, Margaret Okuzumi, May 25, 2004**

“We’d like to see the following items addressed in the final EIR:

- “Analysis of costs of electrification to Tamien instead of to Gilroy. Electrifying all the way to Gilroy doesn’t make sense, until a much greater frequency of train service becomes standard on the Gilroy extension. Even VTA board chair Don Gage, who represents southern Santa Clara County and Gilroy, is on record as saying he doesn’t think electrifying to Gilroy makes sense. Gage feels that increased service levels would better serve his constituents and would rather see electrification monies for the Gilroy extension directed to other infrastructure improvements to permit greater frequency of service to Gilroy. Gilroy extension service operations could perhaps be combined with future planned diesel service to Salinas.
- “Analysis of feasibility of electrifying to Palo Alto. Given the reticence of VTA to fund Caltrain electrification until they have come to some resolution over the BART to San Jose project, it may be necessary to build the first phase to Palo Alto. We’d like the EIR to examine the costs of this.”

**Response 2.2.10** Please see general response: Whether to Implement a Minimum Operating Segment of Electrification.

#### **2.2.11 John Bacon, San Francisco Public Hearing Speaker, April 22, 2004**

“I see from your figures that you hope to gain about 4,000 new riders, cheapest option was \$601 million, \$24 million per electric locomotive is capital cost. On the website it says that the operating cost would be more operating electric versus diesel. Additional cost in maintaining catenary and this would outweigh the savings of operating electric locomotive. Greater reliability. In San Francisco we had a power outage a couple of years ago, and BART was shut down. Caltrain didn’t shut down and used their engines to keep the terminal facility going. If you are standing waiting for a train, a late one is better than none. Just over 4,000 additional riders, which comes to \$180,000/per new rider. Last point, another alternative not discussed, if you could implement level boarding and shorten local trains from five to two cars. You should pick up 4 minutes per car lost. Level boarding is standard and people can come on quickly, gain 22 minutes, 12% of 90 minutes comes to...it would be less than 22 minutes for sure.”

**Response 2.2.11** Please see general response: Ridership Benefits of Electrification for more information on ridership increases from electrification.

**Operating Costs, Diesel vs. Electric:** *Caltrain electrification would increase O&M costs over the No-Electrification Alternative by about \$4.47 million initially and by about \$2.37 million in 2035 under the Electrified Multiple Unit rolling stock option (O&M costs would be slightly higher for electric locomotive hauled service). This analysis is based on the ratio of costs for electric power to diesel fuel remaining constant (at Summer 2008 levels). Projecting future electricity and diesel prices is very uncertain, but long-term trends would tend to support diesel fuel increases outpacing electricity price increases. Section 2.3.3.3 of the EA/EIR describes the impact of electrification on O & M costs.*

**Reliability:** The electric trains could be shut down during a power outage, however, each traction power substation facility would have two sources of electricity supply and would be tapping into the highly reliable 115 kV high voltage utility transmission network, rather than into one of the less reliable, lower voltage distribution systems. Outages on the high voltage network are extremely rare. The analysis presented in EA/EIR Section 3.10 addresses the sources and availability of electrical power for Caltrain, the California energy crisis, ongoing and planned improvements and expansions of energy generation and distribution capabilities, and other efforts to ensure adequate electrical energy supplies for the foreseeable future. Moreover, as reported therein, Caltrain Electrification would result in a net savings of propulsion energy. It should be noted that diesel trains are not 100% reliable either. They are subject to mechanical breakdowns that occur more frequently than the once every few years that has been the frequency of past brown-outs.

**Level Boarding:** Level boarding is being considered as a future improvement by Caltrain’s governing board, but it is a separate issue not directly connected to the Caltrain Electrification Project. Implementing level boarding could reduce dwell times but is not expected to substantially reduce the time required for boarding. A more important factor in reducing boarding times is the number of doors available on each train car. Higher platform edges could conflict with freight clearance requirements. It should also be noted that the preparations needed to implement level-boarding, including retrofitting



all of the existing station platforms, would be extremely expensive. Please also see general response: Rolling Stock Planning.

**Number of cars/train:** Reducing the number of cars per consist could produce a minimal reduction in travel times, but this is not a practical solution. Passengers are most sensitive to travel time during peak hours and to meet the peak-hour demand each train must have at least 5 cars. Because passengers are less sensitive to travel time during the off-peak period, reducing the number of cars on off-peak trains would be less important. More importantly, adding more cars to existing trains is a cheaper operating strategy than increasing the frequency of trains, because running more frequent and shorter trains would require additional staff. After fuel, labor is the second highest cost in the Caltrain operating budget. Electrification would enable Caltrain to add additional passenger cars to trains without degrading speed or performance and would also *slightly* improve travel times. Thus electrification would increase Caltrain's capacity with less expense than by adding an equivalent number of extra trains.

#### **2.2.12 Jim Bigelow, San Carlos Hearing Speaker, May 1, 2004**

I'm Jim Bigelow of Redwood City/San Mateo County Chamber and Menlo Chamber. Looking at this from the employee perspective of people commuting, this electrification process needs to go forward. The Transbay Terminal is only possible with electrification going underground. If you take all the grade separations from here to Gilroy, at \$20 million apiece, you're going to spend way more money doing grade separations before you even get around to electrification, so one of the problems is the lack of money and the overhead wires tend to be a solution because you can't grade separate everything, and high speed rail is a decade off at the earliest, which is more money.

**Response 2.2.12** As outlined in the Caltrain Strategic Plan, it is not a question of deciding between projects so much as developing a timing strategy based on the availability of identified funding and anticipated benefits. The Transbay Terminal project can proceed without the Electrification Program, but would involve added costs for dual mode locomotives to enable the Downtown Caltrain Extension to run in electric mode from 4th and King Streets into the new terminal. Thus, electrification facilitates the Transbay Terminal/Downtown Extension project. Grade separating the entire Caltrain corridor is a long-term JPB objective that would have substantial benefits in terms of reduced accidents as well as noise, since train operators would not need to sound their horns at the many grade crossings. But this is a costly, large-scale program that must be implemented incrementally. The California High Speed Rail project is another large-scale project that currently plans to operate within the Caltrain corridor for its Bay Area segment, but it is still some years off.

Rather than wait until the entire corridor is grade separated and the High Speed Rail project under design, JPB would construct the Electrification Program pursuant to the Caltrain Strategic Plan. This will provide for many years of electrified service while planning for these related projects proceeds. The 25 kV autotransformer feed electrical system identified for the Caltrain Electrification Program is fully compatible with the proposed High Speed Rail system. Design of all electrification infrastructure will be closely coordinated with any planned grade separations to minimize throw-away work and reduce the amount of facility modifications that would be required to accommodate grade separations once the electrification infrastructure is in place.

#### **2.2.13 Elizabeth and Marsden Blois, May 25, 2004**

"We are long-time residents of Menlo Park, California. I am writing to voice strong opposition against the proposed electrification project and the related EIR for the Peninsula Caltrain line from Gilroy to San Francisco. The EIR does not adequately address the environmental impact that the proposed modifications will have to residential neighborhoods along the line. Much of this line will pass through residential neighborhoods, not commercial developments. We are concerned with many aspects of the proposals, including:

"The proposed design of the grade separations is seriously flawed and will lead to a 10-foot berm, with additional height to accommodate electrical wires. This will lead to serious degradation of the surrounding environment and a huge decrease in property values. For example, in Atherton, we

understand that 80 or more trees might be cut down and many more pruned seriously. Apparently the EIR does not adequately disclose the extent of tree removal that will be required. The impact in Menlo Park is not adequately addressed. We understand that the EIR took a stretch of Menlo that has little immediate residential development directly next to the tracks and then projected this to the community. We live in the neighborhood of Felton Gables, a community with many single-family homes directly line the tracks. Would your directors like to be the owner of one of these homes, looking out your dining room to a 10 foot pile of dirt (decorated with a few flowers!)?

"If electrification is really to come, Caltrain needs to listen to the communities that will be impacted by the construction and the ultimate modifications. The designs being put forth (or shall we say railroaded) through are flawed and unnecessary. Alternate plans that have less negative consequences to the environment of the Peninsula should be carefully studied and evaluated. For example, Caltrain should consider no raised tracks and the innovative designs put forth by Nick Watry."

**Response 2.2.13** The ultimate alignment envisioned by Caltrain's strategic planning is predominately four-track with the Caltrain railroad corridor completely or almost completely grade-separated from vehicular cross traffic; some segments with only three tracks may remain. It is anticipated that the ultimate alignment for Caltrain would be designed and implemented incrementally, as conditions for identifying specific projects and funding are identified and taking advantage of opportunities to partner with other projects. Grade separations are currently programmed in South San Francisco, San Bruno, and San Mateo. They are not part of the Caltrain Electrification Program. If it is determined to proceed with the Electrification Program, electrification design would be coordinated with the design of these grade separations, but this would not proceed until the Caltrain Electrification EA/EIR is completed and approved. Please see Section 17.4 for responses related to tree pruning for the Electrification Program.

#### **2.2.14 Jeff Carter, San Carlos Hearing Speaker, May 1, 2004**

"I strongly support the program. There's still a lot more that needs to be done in the EIR but right now, I support it. Modern railroads around the world are electric. You go to Europe and everything's electric; the northeast corridor, that's electric. The performance of electric railroad over diesel-hauled railroad is – something that doesn't get built much any more because it's so much better. Acceleration and deceleration is a lot better compared to diesel and it speeds up the service. I think it would speed up the service more than the phase-in of the [unintelligible] in the current program. For instance, the Baby Bullet, they speed up the train by cutting stations and it leads to a loss of ridership. However, with electric service, you can speed up the service and serve more stations. My own calculation is that you can reduce the time between Millbrae and San Francisco by five minutes. That's only 14 miles so that's more significant than some people might think. I think electrification is the way to go. The cost, a lot of people are concerned about the cost, \$600-\$800 million, but that's a bargain compared to spending \$4 to \$5 billion to put BART down there. We spent \$1.5 billion to take BART to the airport and we all know what a disaster that turned out to be. BART should just stop where it's at and money for BART should be used to improve BART itself. Electrification is the answer and get more answers for people's concerns. I think it would be a modern railroad and you want to get people out of their cars and this is a good way to do it."

**Response 2.2.14** Caltrain gratefully acknowledges your support for electrification.

#### **2.2.15 Charlie Cho, San Jose, May 17, 2004**

"Operate the Gilroy extension separately from the SF-SJ main line. Electrify only between San Francisco and San Jose. Santa Clara VTA will inevitably resist and drag their feet on paying its fair share for electrification. Not electrifying to Gilroy will reduce the amount VTA will have to cough up. In addition to lowering costs, this will significantly reduce the amount of coordination required with the Union Pacific Railroad. For the foreseeable future, the Gilroy extension will not see levels of service anywhere near enough to justify the capital and operating costs of electrification. Separating it to a different line can have other advantages. Instead of simply ending at San Jose, Gilroy trains could be extended to Union City, for example, providing an interim connection to BART."

**Response 2.2.15** Please see general response: Whether to Implement a Minimum Operating Segment of Electrification.

**2.2.16 Martin Engel, May 25, 2004**

"I oppose the plan to electrify the Caltrain commuter system. Here's why:

"Upgrading an obsolete, 19th century technology in the 21st century makes no sense.

"...Heavy rail for short haul commutation is like killing flies with sledgehammers."

**Response 2.2.16** Electrified commuter rail is the system of choice for travel markets like the Peninsula. Almost every major European city and many American cities are served by commuter rail because of its operational efficiencies, ability to operate express trains, low capital and operating costs (compared to heavy and light rail) and high quality passenger service. Electrification is an important part of creating a clean, environmentally friendly, modern commuter rail service on the Peninsula.

**2.2.17 Bob Figoni, May 1, 2004**

"This project should begin after all questions have been raised!"

**Response 2.2.17** *The extensive consultation and coordination conducted for this project is described in Section 6.0 of the EA/Final EIR.* The purpose of evaluating and disclosing the impacts of a proposed project in an environmental document that circulates for agency and public review and comment is to provide a forum for questions to be raised and answered. The Caltrain Electrification Program EA/DEIR was circulated for 60 days during which written comments could be forwarded. Four separate public hearings were held as well to elicit public and agency comments. Volume II of the EA/Final EIR presents written responses to all of the nearly 360 questions and comments that were received during this formal review process. Obtaining such extensive input helps to inform the JPB's decision as to the alternative to be identified and adopted as preferred. *During preparation of the EA/Final EIR, nine separate public presentations were made in various communities along the Caltrain corridor.*

**2.2.18 Joseph Grass, May 25, 2004**

"As Menlo Park residents living near the Caltrain tracks, my spouse and I are concerned about the plans for electrification of Caltrain, and the associated grade separation required. My concerns are as follows:

"The electrification is proposed to be done prior to the grade separation, which would require the electrification work to be redone again after grade separation. This seems to be a waste of taxpayer dollars.

"A full cost benefit analysis of all options for grade separation should be done as well.

"I respectfully request that the above issues be more thoroughly investigated before this process proceeds. Alternative ideas from the community must be officially considered and addressed in writing in the EIR, and the full environmental impact must be quantified before this project may proceed. To do less would be a disservice to the community that Caltrain is meant to serve."

**Response 2.2.18** Please see general response: Prioritization of Grade Separations and Electrification.

**2.2.19 Kaaren Hanson, May 25, 2004**

"As Menlo Park residents living near the Caltrain tracks, my spouse and I are concerned about the plans for electrification of Caltrain, and the associated grade separation required. My concerns are as follows:

"The elevation of the train tracks onto a berm going through Atherton, Menlo Park, Palo Alto, and the rest of the Peninsula will be extremely unsightly. The associated electrical wires will also add to the negative impact, being even higher than the train. This kind of elevated train track is suited to an industrial area, but definitely not to the residential neighborhoods of Menlo Park, Atherton, and Palo Alto.

"Not enough consideration has been given to the alternative of keeping the train tracks at grade level, and making all streets go below grade level at the crossings. Citizens in the community with relevant engineering backgrounds have proposed alternate ideas to accomplish this, however they have been dismissed out of hand or ignored without due consideration of their ideas.

"The electrification is proposed to be done prior to the grade separation, which would require the electrification work to be redone again after grade separation. This seems to be a waste of taxpayer dollars.

"A full cost benefit analysis of all options for grade separation should be done as well.

"I respectfully request that the above issues be more thoroughly investigated before this process proceeds. Alternative ideas from the community must be officially considered and addressed in writing in the EIR, and the full environmental impact must be quantified before this project may proceed. To do less would be a disservice to the community that Caltrain is meant to serve."

**Response 2.2.19** Please see responses to Comment 2.1.2 and the general response on Prioritization of Grade Separations and Electrification.

#### **2.2.20 Edward Holland, Sunnyvale Hearing Speaker, April 24, 2004**

"While you were talking about travel time, the thought comes to me that probably more important than travel time is the feeling that you get...gives customer the feeling that he is getting there faster, but isn't getting there any faster. That's a plus.

"If we go ahead and do electrification, are there other transportation programs that we should be doing, but can't because of money going into that?"

**Response 2.2.20** Because electric trains accelerate and decelerate faster than diesel-powered trains, electrification would reduce travel times. This will not only actually speed up the service—*average peak-period* travel time reductions of *one to eight* minutes per trip are anticipated—but also the reduction in travel times should be evident to Caltrain riders.

There are many beneficial transportation projects currently competing for limited regional and federal dollars. To meet federal guidelines, a project must have its funding identified before it can have its environmental document approved. Funding for the Caltrain Electrification Program has been identified and programmed in the Regional Transportation Improvement Program (RTIP) for the San Francisco Bay Area, which demonstrates its value and standing among competing project proposals, for several years. Caltrain's governing board, the JPB, carefully weighs competing capital investment proposals to identify the best possible options given financial, environmental, customer service, and other considerations. Caltrain's recently adopted Strategic Plan sets forth the structure within which these investment decisions can be made.

### 2.2.21 Marena Kaiser, San Carlos Hearing Speaker, May 1, 2004

“Are they not working to make diesel engines that are less polluting? Is that any serious option that has been discussed? Also, you have declining ridership, and you’re always talking about increasing trains per day, what gives? And does the money mentioned include a new storage and maintenance facility for the electric trains or is this another added expense? And no mention has been made of the damage effect on people of 100 mph and higher trains so close to homes and businesses. Of course, I’m very concerned about the negative impact of high voltage wires. And another thing I’d like to ask is what is the connection between Caltrain and the California High Speed Rail project, because all that I have read in the past, the California project is to be an all new rail line totally separate from anything else. All grade separated for 100 mph trains, from what I read, LA to Sacramento. How is this to be compatible with Caltrain? We can never 100% grade separate. So, what is this all about?”

“It seems to me that Caltrain or your goal, is evolving to make Caltrain into a two-tier system in a sense of trying to please everyone. First, a stop at every station and second, a stop at every once in a while station. It might be the danger in all of this is that you could end up not serving anyone adequately and you will lose more customers.”

**Response 2.2.21** With regard to the concept of “clean diesels”, please refer to Response 2.0.1.

Planning for additional train service is done based on projections by the Metropolitan Transportation Commission (MTC) and the Association of Bay Area Governments (ABAG), which take into account the expected long-term population and employment trends and general economic health of the region. It is critical to plan now for future demand because of the long lead time for increasing train service.

The Caltrain Electrification Program capital cost estimates include additions and modifications to the Lenzen maintenance facility needed to accommodate electric vehicle maintenance.

The Electrification Program would not increase the top train speeds; *under both the No Electrification and Electrification Program Alternatives, the track speed will remain at the current 79 mph.* The Electrification Program would allow trains to accelerate and decelerate faster, thus achieving a higher average speed, but not a higher top speed compared with diesel operations. High speed trains would operate at higher speeds within the Caltrain corridor only if grade separations are constructed to ensure the safety of such high speed operations. Otherwise, the high speed trains would slow to Caltrain-compatible speeds within the Caltrain corridor portion of the high speed rail alignment (consistent with high speed operations on other systems, such as the French TGV and German ICE trains, which slow to standard speeds as they enter cities where they share track with other railroad operations).

Section 3.17 of the Electrification Program EA/EIR describes an analysis of the effects of electromagnetic field radiation and electromagnetic field interference. As reported in the EA/EIR the analysis determined that the overhead contact system would not have health effects for the population along the Caltrain corridor.

Coordination is ongoing between the Electrification Program and California High Speed Rail to ensure that the Electrification is being planned not to preclude high speed rail. Please see general response: Electrification and High Speed Rail.

With the introduction of Baby Bullet service in June 2004, Caltrain implemented a new timetable that incorporated limited-stop services in addition to the express service. These service changes are designed to serve identified travel markets and are not expected to result in loss of ridership—quite the contrary.

#### **2.2.22 Doug Kaufman, Menlo Park, May 25, 2004**

"I also understand that the electrification is being done PRIOR to the proposed Caltrain Grade Separation. This means if the current Grade Separation Plan is implemented you will tear out this round of electrification and install a new system. This is a reckless and wasteful use of public funds."

**Response 2.2.22** Please see general response: Prioritization of Grade Separations and Electrification.

#### **2.2.23 Jim Kelly, May 1, 2004**

"Please consider publicizing the public experience with electrification in Europe and elsewhere. Perhaps invite a small group from Europe to this area to meet with the locals to discuss their reaction to electric trains over the years."

**Response 2.2.23** As part of Caltrain's continued planning for electrification, Caltrain will consider publicizing how other commuter rail systems have been improved including European systems.

#### **2.2.24 Jim Kelly, San Carlos Hearing Speaker, May 1, 2004**

"I would like, first of all, much greater public educational effort is required on this issue. For example, in local newspapers in past week, they had a story about electrification and illustrated it with two vehicles that they said Caltrain will be running. One of our local newspapers sent photographers to Mountain View and they took picture of two light rail vehicles as Caltrain. I have not seen correction of that error."

**Response 2.2.24** Caltrain has contacted the newspaper and provided information to them.

#### **2.2.25 Art Lindgren, San Carlos Hearing Speaker, May 1, 2004**

"It might be said, high cost of electrification trains, however, today's prices are tomorrow's bargains. A good example is the building of Bay Bridges. In 1936, it was really expensive to build all those bridges. The cost looked high, but ten years from now, to replace all that would be a whole lot more. And there's the benefit of electrification because of clear air. Just the other day it said in the paper, the air pollution in Bay Area is getting really bad, reaching high levels. With electrification, this alone would be worth it. And if traffic worsens in another ten years—and you haven't seen anything yet, if we continue to build more and more, transportation will be at a stand-still if we don't do something about it."

**Response 2.2.25** Comment noted.

#### **2.2.26 Yevgeniy Lysyy, Sunnyvale Hearing Speaker, April 24, 2004**

"In other countries...reduces operational cost...The reason for Caltrain Electrification is to reduce noise and air pollution and to build more apartments next to railroad. But, as for me, I like to live in noisy place...In other countries...They built apartments for low-income people like me anyway and such affordable housing just living next to freeways, airports, railroads without electrification. If they want to get more money, they must risk money particularly with electrification. Why Bay Areas, all of California, and the United States must pay money for a few realtors with money. Let them pay themselves. By the way, noise of Caltrain is nothing compared with noise from freight train, they run all night and all day."

**Response 2.2.26** Comment noted. As documented in the EA/Final EIR, the Caltrain Electrification Program would reduce noise and air pollution. Operating costs *are addressed in Section 2.3.3 of the EA/FEIR.*

### **2.2.27 Paul Lund, San Carlos Hearing Speaker, May 1, 2004**

"I'm strongly in support of electrification. I have three brief points to make. The first is a question: has it been considered to phase in electrification to Gilroy and to put in the overhead contact wires only as far as Tamien and to run diesel trains to Gilroy, as the number of riders there is miniscule compared with anywhere else on the system. When the Dumbarton Rail comes on line, it's likely to have far greater ridership per mile and the cost-effectiveness of electrifying that would be far greater than Tamien to Gilroy, and yet, that's supposed to be diesel. Anyway, that's my first point."

**Response 2.2.27** *JPB has decided to only pursue electrification of Caltrain for the San Francisco to San Jose segment. Implementation of this potential future extension of electrification service to Gilroy is not expected within the time horizon of the primary electrification system.* Please refer to general response: Whether to Operate a Minimum Operating Segment of Electrification.

### **2.2.28 Brooks H. Lupien, Sunnyvale Hearing Speaker, April 24, 2004**

"How is electrification justified as to the expense to go as far as Gilroy when the traffic down there will be relatively light?"

**Response 2.2.28** *See Response 2.2.27.*

### **2.2.29 Richard Mlynarik, May 24, 2004**

#### **"No electrification to Gilroy.**

"Electrifying a line used by fewer than a hundred trains a day is universally regarded as fiscal nonsense, with huge fixed costs far outweighing minute operational benefits. Even in the most optimistic scenarios, Caltrain service to points south of downtown San Jose will be characterized by factors such as long inter-station spacings, tidal and peaky 'commuter rail'-type ridership, infrequent service, together with a very challenging right-of-way control situation.

"All of these factors make the decision even more cut and dried in Caltrain's case: any money spent electrifying UPRR's (or VTA's or Caltrain's) tracks south of San Jose is money quite simply wasted, money which could be far better spent on other, net-positive Caltrain projects within Santa Clara County. This long section of line would also have disproportionately higher levels of maintenance costs associated with OCS maintenance; it would be 'the gift which keeps on giving.'"

"Follow best global practice: Don't even think about it!"

#### **"Study a Minimum Operable Segment phase from San Francisco to Palo Alto.**

"Several issues are involved:

- "Financial capacity. Available financial resources may not be able to stretch immediately to the combination of 100% line electrification and 100% fleet replacement, which would yet again provide a pretext to defer all modernization of the Caltrain corridor for yet another decade. By staging construction (but not design, which should be full-corridor) to match fiscal and political commitment, Caltrain has a chance to demonstrate success and build upon it, rather than to continue making empty promises to the public.
- "VTA independence. If recent history is any guide, one of the Caltrain member agencies will attempt to sacrifice not just its local match of Caltrain projects but also undermine Caltrain's positioning for regional allocations. San Francisco County has voted with its wallet to make Caltrain electrification a priority, and San Mateo County is poised to do so in November 2004. Approved upgrades to two-thirds of the line cannot continue to be held hostage to the political situation in one jurisdiction at the far end of the line.

"Caltrain needs to demonstrate its ability to build and operate a modern and attractive service for the residents of the San Francisco Peninsula far sooner than the present funding priorities of VTA will allow.

- “Downtown San Francisco extension dependency. If electrification is delayed by more than another year or so, it is quite possible that a new terminal station in downtown San Francisco and new tunnels leading to it will be completed before electrified rolling stock is available to serve it and before electrified overhead to connect it to the Caltrain line is in place.

“Given the huge borrowing costs of the DTX project, all delays in service startup are potentially catastrophically expensive, not to mention embarrassing.

“By removing the fiscal and political roadblock of requiring 100% fleet replacement and 100% electrification, a significant cause of uncertainty on the critical path to DTX completion can be mitigated.

“By electrifying the full San Francisco to San Jose line in two stages, with Palo Alto a fairly natural break point both operationally and jurisdictionally, Caltrain may be able to better match cash flow to construction while operating much better levels of service than are available today.

“With only 60% of the rolling stock and fixed installation costs – and assuming engineering design overheads for the entire line are borne up-front – procurement and start-up should be able to proceed with little delay. Contract options would ensure that full system build-out could proceed if, as one might expect, there is a change in the local political winds and there is a desire to build upon success.

“With a comparatively small and completely modern fleet, maintenance facility needs on the initial segment of the line will be modest – perhaps limited to a train washer and enclosed inspection platforms – and heavier maintenance such as wheel profiling can be scheduled at the CEMOF.”

**“Complete corridor electrification engineering planning early.**

“Circa 65% design for electrification infrastructure for the entire corridor from San Francisco to San Jose should be completed as quickly as possible, even if full corridor-long electrification funding is not immediately identified. This design work must be maintained and updated as any works take place along the Caltrain right of way.

“Modest funding should be secured as soon as possible for pre-electrification works which can be undertaken in parallel with other projects along the line.

“A primary goal of Caltrain capital projects should be to actively coordinate electrification preparatory work with all other projects, particularly signaling changes and track renewals and track realignments. It should be possible to excavate and install catenary pole foundations along any section of track which is booked out of use for maintenance or for some other right of way project. In this way cumulatively expensive incremental costs – such as flagging, train and passenger delays – are minimized and all projects proceed more smoothly.

“Caltrain is perceived as having a habit of doing the same work over and over on some sections of track; it would be a positive step if electrification broke the cycle of make-work for flaggers.”

**“Avoid NECIP; avoid Not Invented Here.**

“At all costs, Caltrain should avoid everything and everybody connected with the Amtrak North East Corridor “Improvement” Project “north end” electrification. Not only did this project have by far the most expensive electrification costs of any line anywhere on the planet, and not only was it delivered years late, hundreds of millions of dollars over-budget, and under a cloud of litigation and allegations of malfeasance, but the system appears to be over-engineered in a fashion that can only lead to a suspicion that contractual incentives were made for each ton of steel consumed.

“The aesthetics of the resulting installations are also horrific, with hugely massive forests of catenary support structures which are out of place in every circumstance, including every other electrified railway in the world.

“There are no real ‘unique Californian’ or ‘unique American’ issues which need to be addressed; instead a standardized overhead design standard from a major rail infrastructure provider should be



adopted with as little modification as legally possible, and costs, performance and aesthetics should be measured against global best practice, not American exceptionalism.

“Specific comments on individual pages of the document:

- 2-45 section 2.3.2.9: Staging should be San Francisco to Palo Alto. Electrification to Gilroy should not be pursued any further than this study.”

**Response 2.2.29** Please refer to general response: Whether to Implement a Minimum Operating Segment of Electrification regarding recommendation to electrify only between San Francisco and Palo Alto.

The Caltrain Electrification Program is a stand-alone project separate from the Transbay Terminal Project’s downtown extension, however, they are complementary and will be closely coordinated using the process outlined in Caltrain’s Strategic Plan. The JPB will carefully consider progress on the Transbay Terminal Project in developing an efficient investment strategy to eliminate the possibility that the downtown extension would be completed before electrification of the rest of the line.

The JPB will consider moving forward with electrification preliminary engineering as part of the regular capital investment process. This process is outlined in Caltrain’s Strategic Plan.

Electrification is considered in the planning of all Caltrain improvements as recommended in this comment. The first step in actually implementing any specific improvements for electrification (such as installing catenary pole foundations) is certification of the EA/EIR. Next more detailed planning and engineering for electrification could be completed, and following this, specific improvements could be completed as part of other improvement projects.

The Northeast Corridor Electrification project between New Haven and Boston is the first major electrification project completed in the United States in many years. Many lessons were learned on that project and Caltrain will use these lessons in planning *its* electrification project.

#### **2.2.30 Robert Olton, San Carlos Hearing Speaker, May 1, 2004**

“I’m a regular Caltrain rider representing not only myself but a bunch of other riders and I hope you will listen to what your customers who are currently using your system. People I talk to are opposed to this electrification for two major reasons.

“One of these is cost-benefit analysis. This is a huge expenditure and we question your projection of increased ridership from electrification. It might go up a little bit but because of increased service, you’re running more trains, electrification has nothing to do with it. Do you know of anybody who says, ‘I don’t ride the train now, but I would if you electrified it?’ Let’s get real. This would do absolutely nothing to increase ridership.

“Second, from your chart, there is a huge potential non-project possibility here which is to take that gigantic amount of money and use it instead for something that would have a huge increase on ridership and would improve the environment and that is to take that money and use it to extend Caltrain into the Transbay Terminal in San Francisco and I know that’s coming under other impacts and environmental reports but that’s the thing that all us riders really want and that really would have a dramatic increase on ridership and would give you more bang for your buck, whereas electrification itself does almost none of those things.

“Thirdly, it’s ugly, like some of the people were saying here. I happen to live in Belmont. We just spent millions of dollars to make the Caltrain station the centerpiece of our downtown, and part of those millions have been to put all the wires underground. Now we’re going to put them all up again? Come on! And don’t give us an ugly-looking thing, which the voters are going to look at and say, you know, these people spent half a billion dollars, to create ugliness up and down the Peninsula, under a program that does nothing to increase ridership, and this is just not something we can justify when the things you could use this money for, which would not increase ugliness, would improve the environment, and would dramatically improve ridership, would be to extend Caltrain into the Transbay

Terminal; let's use the money for that. And by the way, electrification is not necessary to extend Caltrain into San Francisco, yeah, you'd have to electrify the last couple of miles, but you wouldn't have to electrify the entire thing. Okay. Please do what your riders want. We are your constituents and we want to help you succeed. We feel this project is a waste of money and the way to spend it is to extend Caltrain into the Transbay Terminal."

**Response 2.2.30** The JPB must weigh the costs and benefits of electrification compared to other projects (see general response: Electrification Cost/Benefit Analysis), increased ridership is only one, and not the primary benefit of electrification (see general response: Caltrain Electrification Benefits). The Caltrain Electrification Project is complementary to the Caltrain Downtown Extension because it would reduce the cost of the downtown extension by a *substantial amount* (e.g., *avoided costs for dual mode locomotive purchases and tunnel ventilation to control diesel emissions*) and improve operations (see general response: Electrification and Transbay Terminal / Downtown Caltrain Extension Project).

Regarding the visual impact of the OCS infrastructure, aesthetics is a subjective area, and visual changes that appear innocuous or even positive to one viewer may appear unacceptably adverse to another. It must be acknowledged that all of the OCS infrastructure would be constructed within an existing, active freight and passenger rail corridor that pre-dates or was contemporaneous with surrounding development. Nonetheless, preliminary design of the OCS has considered visual impacts seriously, limiting portal structures to only those situations where less impacting OCS arrangements would not be practicable, and choosing the more open headspans instead of bracket arms wherever they would be feasible and cost-effective. OCS arrangements and visual impacts in the vicinity of the historic Caltrain stations *will* be closely coordinated with the covenant holder for the historic stations to ensure no adverse effects on the stations' setting. Caltrain acknowledges that there are areas, such as in Belmont and San Bruno, where downtown beautification projects have taken or are taking place. Caltrain will coordinate the design of the OCS infrastructure with planners in these cities. Coordination is already ongoing with the City of San Bruno in developing planned Caltrain grade separations.

#### **2.2.31 Robert Olton, May 1, 2004**

"We oppose the Caltrain Electrification Program because:

"...At huge expense it does nothing to significantly increase ridership."

"...Other ways of using this money would have far more positive effects on ridership and customer satisfaction."

**Response 2.2.31** Please see general responses: Ridership Benefits of Electrification, Caltrain Electrification Benefits, Electrification Cost/Benefit Analysis, and Consistency of Electrification with Caltrain Strategic Plan.

#### **2.2.32 Robert Olton, May 14, 2004**

"Attached please find a short letter requesting you to vote NO on the proposed Electrification project.

"We believe the costs of this proposal are WAY out of line for the proposed benefits, and that a FAR BETTER use of the money--and something that would have a more beneficial effect on the environment--would be to use this money to extend Caltrain to a downtown San Francisco terminal.

"Our reasons are in the attached letter [included just below and in other categories as appropriate].

"Finally, we believe that if this proposed project is implemented, it will poison the political environment for any future Caltrain projects. Voters will say "Half a billion dollars for THAT? All that ugliness and so few benefits? Why approve any other money for those people to waste. You will be perceived as having created something as useless as the BART extension to Millbrae!

"I am a daily Caltrain rider (Hillsdale to San Francisco), and I would like to voice some strongly-held negative comments about the proposed electrification program. Please note: the comments below

reflect not only my own opinions, but also the opinions of many other riders I have talked with on Caltrain.

"Thank you for voting NO on the Electrification proposal!

"We strongly object to spending far more than half a BILLION dollars for a program that:

- "Does NOT really increase ridership. (Note: the ridership increases projected in the EIR—roughly 4,000 riders per day—result from adding more trains to the system, NOT from electrification. The additional trains could easily be provided WITHOUT electrification. There is NO EVIDENCE that electrification itself would produce any increase in ridership at all!).
- "Is NOT required for extending Caltrain to a downtown San Francisco terminal (except for the final 1-2 miles.) There are low-tech, Amtrak-proven ways of providing this extension WITHOUT electrifying the entire Caltrain system. (And these would NOT require exotic fuels or hybrid locomotives.)
- "Extending Caltrain to a downtown San Francisco is the MOST IMPORTANT "Non Project Alternative" for the use of this money, yet it is not even mentioned in this EIR! Why not? After all, NOTHING will make as much difference to Caltrain ridership (and hence to the environment) as this extension. Moreover, the converse is also true: WITHOUT such an extension, anything else you do to Caltrain will probably have only marginal effects on ridership.
- "If enacted, we believe this project will poison the political environment for any future Caltrain projects. The voters will say "Half a billion dollars for THAT? All that ugliness and so few new riders? Why approve any other money for those people to waste! You will be perceived as having created something as useless as the BART extension to Millbrae!

"For all these reasons, please DO NOT approve the proposed Electrification project!

"Instead, please use the money for a downtown extension, with its dramatic increase in ridership! That's what everyone wants, it will make FAR more difference than anything else, and it leaves room for electrification in the future if that should prove more desirable later on.

**Response 2.2.32** Please see general responses: Ridership Benefits of Electrification, Caltrain Electrification Benefits, Electrification Cost/Benefit Analysis, Consistency of Electrification with Caltrain Strategic Plan, and Electrification and Transbay Terminal / Downtown Caltrain Extension Project.

Also note the substantial air quality improvement and noise reduction benefits of electrification. Several comment contributors who live close to the tracks appear more than willing to accept the addition of poles and wires in return for the reductions in train operating noise and air pollution emissions—for example, see Comment 18.1.4.

### **2.2.33 Judith M. Oranasu, Ph.D., May 25, 2004**

"Upgrading an obsolete, 19th century technology in the 21st century makes no sense.

"...Heavy rail for short haul commutation is like killing flies with sledgehammers."

**Response 2.2.33** Electrified commuter rail is the system of choice for travel markets like the Peninsula. Almost every major European city and many American cities are served by commuter rail because of its operational efficiencies, ability to operate express trains, low capital and operating costs (compared to heavy and light rail) and high quality passenger service. Electrification is an important part of creating a cleaner, *more* environmentally friendly, modern commuter rail service on the Peninsula.

### **2.2.34 Win Reis, May 24, 2004**

"I wholeheartedly support electrification, but only as long as it includes two other components: reducing the number of stations and increasing the amount of parking at each station.

"Caltrain provides a complete transit solution for a small percentage of riders. Most riders drive or take a bus to a station and then take a bus or shuttle van at the end of their trip.

"In order to speed transit times, Caltrain should look at reducing the number of stops by 25-50%. The following stops could serve as good examples:

- "either Sunnyvale or Lawrence
- "San Antonio
- "Atherton
- "San Carlos or Belmont
- "Hayward Park
- "Burlingame or Broadway
- "San Bruno

"The bottom line is that each stop adds to travel times. Yes, some commuters would need to travel further to reach a station, but the faster Caltrain transit time could help offset that additional time.

"The major cost challenge this presents is that parking would need to be significantly increased at stations near those being eliminated. However, combined with electrification that will improve acceleration and speed, this change could significantly decrease travel times."

**Response 2.2.34** *Reducing the number of stations is not part of the Electrification Program. However, EMU vehicles allow for a multitude of enhanced service patterns when compared to diesel locomotives. One of the electric vehicle service pattern options allows for adding station stops while still reducing the end-to-end run time. The enhanced performance of EMU vehicles can be attributed to the superior acceleration and deceleration capabilities, when compared to diesel locomotives.*

## **2.3 OVERHEAD CONTACT SYSTEM**

### **2.3.1 San Francisco Municipal Railway, Jose Cisneros, Deputy General Manager for Capital Planning & External Affairs, June 3, 2004**

"Page 1-14 In Section 1.3 - Other Related Projects, include a description of Muni's planned rerouting of the 22-Fillmore trolley coach line via 16th Street between Kansas and 3rd Street, to a new terminal in Mission Bay. This project will reroute 22-line electric trolleycoach service to operate on 16th Street, crossing the Caltrain tracks at grade. Muni is committed to this project by the City's Mission Bay Agreement with Catellus. Subject to funding availability, Muni expects to begin design work on this project between 2005 and 2009. Muni staff has taken some initial conceptual looks at what would be required to have a trolleycoach line electrified with 600v DC overhead cross a mainline rail line electrified at 25kv AC at this point, and the challenges are significant from both the technical and operational perspectives. The two agencies will need to work closely in developing this project in the future.

"Page 2-7 In Section 2.3.2.1 - Overhead Contact System, include a description of what would be required to have the 22-line trolley coach overhead intersect the Caltrain OCS."

**Response 2.3.1** *The Caltrain Electrification Project analyzed the concept of a possible trolley bus crossing at 16<sup>th</sup> Street when the concept surfaced in 2004, and as the electrification moved from conceptual stage to 35% design. The Caltrain project team conducted a preliminary technical analysis of the issues associated with a 25kv ac and 600 V dc transportation system crossing one another. The project team concluded in 2005 that a safe, reliable and maintainable solution was not readily definable for the 16<sup>th</sup> Street trolley bus concept. Furthermore, eliminating the overhead lines, or making provision for the removal of power, causes significant operational and safety risks to*

*Caltrain and Muni at a heavily traveled intersection and the critical approach to 4<sup>th</sup> and King Terminal. Given the conclusions to the preliminary technical analysis, and in the absence of any further contact from MUNI, the Caltrain electrification project proceeded with the design for a standard at-grade crossing for non-electrified vehicles in 2006 and 2007. The design for the electrification system includes a standard arrangement for the overhead catenary system crossing 16<sup>th</sup> Street to provide continuous 25kV ac power to Caltrain trains. Further coordination with this potential project may take place during the detailed phase of design if funding becomes available for the Muni trolley bus project to move forward..*

**2.3.2 City of San Mateo, Department of Community Development, Stephen Scott, Principal Planner, May 14, 2004**

**“Section 2.3.2:** The EA should illustrate where the different overhead contact systems are expected to be used along the whole length of the corridor. The document describes the type of physical situations where the different systems might be used, but a simple type of plan view schematic illustrating where the different types are expected to be located would be helpful.

“For instance, in San Mateo, in the vicinity of the Hillsdale Station, Cal Train has plans for a four-track alignment and a new station to facilitate express service and passing tracks. If the electrification project precedes the passing track project, what overhead contact system will be used? Will the multi-track arrangement with headspan construction be utilized, or will a two-track system be installed and subsequently replaced with a multi-track system?”

**Response 2.3.2** The particular type of OCS support is dependent upon the track configuration being electrified—single-track, two-track, three-track, or more—and other site-specific requirements and constraints as described in Section 2.3.2.1, Overhead Contact System, of the EA/DEIR. To depict specific OCS applications for each location along the Caltrain corridor would require development of detailed design plans for the whole 51-mile corridor prior to completion of environmental review. With regard to the installation of future four-track arrangements, particularly when coupled with prospective grade separation projects, the timing of construction would be critical. Where designs can be agreed upon and the engineering coordinated, it would be possible to install future multi-track arrangements to support the initial one or two OCS equipments, which would mean that only limited adjustments would be needed as track and OCS additions were made. This type of coordination is likely for the four grade separations Caltrain currently has programmed.

With grade separation construction subsequent to electrification, some replacement would be inevitable, even with closely coordinated designs. Note, however, that only one-quarter of the cost of the Electrification Program covers elements that depend on the specific track alignment. Electrification designers would use conceptual plans for the ultimate track alignments and adjust the electrification design to reduce the amount of replacement that would be required.

**2.3.3 Architecture 21, Michael Kiesling, May 25, 2004**

“The EIR should consider the use of pre-stressed concrete for the OCS poles, with respect to lifecycle costs, initial capital cost, and environmental impacts.

“The EIR should consider the placement of a pair of OCS poles serving two tracks each along a 4-track ROW, as opposed to two poles with a four-track headspan.

“The EIR should explain the feasibility of a grade crossing with Muni’s 600v dc trolleybus OCS at the 16<sup>th</sup> Street grade crossing.”

**Response 2.3.3** Pre-stressed concrete poles used in the past for OCS construction have performed badly. Steel poles of various sections—H, round/square/rectangular tubes, either parallel-sided or tapered—are the pole type of choice throughout the world. Steel poles provide great flexibility, particularly for drilled attachments, are low cost, and offer excellent lifecycle performance.

Pole placement is driven by track spacing, which is frequently governed by curvature and available right-of-way width. Side poles, each serving one track only, is the preferred option. Center poles,

positioned between and serving each of two tracks, are another option for multi-track support solutions. Headspans or portal structures are the preferred alternative for areas with more than two tracks or where track spacing is limited. Aesthetics *will be* a primary consideration in determining the OCS arrangement in *visually-sensitive areas*, and judicious trade-offs will need to be made where site specific requirements and constraints also must be considered.

Please refer to the response to Comment 2.3.1 regarding the Muni crossings.

#### **2.3.4 Union Pacific Railroad, Tom Ogee, Chief Engineer–Design, May 25, 2004**

“2. The report indicates the design of the electrical distribution system and overhead electrical supply system will follow the National Electric Safety Code. The design must also follow the guidance of the American Railway Engineering and Maintenance-of-Way Association (AREMA) 2002 Manual for Railway Engineering, Chapter 33, Electrical Energy Utilization.

“3. Along trackage where the Union Pacific has operating rights as well as any operation proposed for Union Pacific track, adequate vertical clearance from top of rail and lateral clearance from centerline of track must be provided in accordance with AREMA standard clearances for overhead electrification as shown in the 2002 Manual for Railway Engineering, Chapter 28, Section 1.8, Figure 28-1-7.”

**Response 2.3.4** Comments Noted. The Preliminary Engineering was developed in 2000 -2001, in accordance with the guidelines and recommendations detailed in both Chapter 28 and Chapter 33 of the 2000 AREMA Manual. Final design would be based on the recommendations in the then current issue of the Manual, the current version of the (AREMA's) EPRI Handbook and the applicable provisions of the Trackage Rights Agreement between the JPB and UPRR.

#### **2.3.5 Lorelei Homeowners Association, Henry L. Riggs, May 3, 2004.**

“It seems like a great idea to electrify the corridor. I'm concerned, however, about two aspects of impact on our environment.

“First, will the power line be overhead and visible, or under the track?”

**Response 2.3.5** The electric wires would be overhead and visible.

#### **2.3.6 Andrew Cigolie, May 4, 2004**

“As far as the OCS vs. 3rd rail which was brought up on Saturday, I support OCS. I have been to a number of countries in Europe and Asia that use OCS in urban settings. I find it hard to believe they would be using OCS instead of 3rd rail unless there were some good reasons for it.”

**Response 2.3.6** OCS power distribution is the preferred technology for railroad operations. Please see general response: OCS and Third Rail Power Distribution Systems.

#### **2.3.7 Richard Mlynarik, May 24, 2004**

“Avoid portal and flexible headspan structures except in yards and terminals.

“Portal structures have significant aesthetic (i.e., NIMBY) impacts, while headspans on mainline track not only require more expensive foundations, but are problematic from a maintenance perspective.

“Given Caltrain's generally extremely generous right of way, space exists in most locations to allow side or center pole catenary suspension, and electrification design and track realignment projects should take advantage of this.

“Mechanically independent suspension of the OCS on adjacent tracks greatly simplifies electrification maintenance work, allowing other tracks to remain in service, and greatly improves reliability, by confining the effects of many mechanical failures of the overhead system to a single track. In

contrast, failure of some components on a headspan structure could close down four mainline tracks at once.

“Consideration should be given to allowing the use of double-channel masts, steel tube masts, or concrete masts, not just the steel H-beams assumed in the DEIR. There may be both aesthetic and cost reasons to allow contractors to suggest more appropriate materials.”

“Specific comments on individual pages of the document:

- “2-8 section 2.3.2.1: Portal and headspan structures should be avoided wherever possible, and, most importantly, near-future Caltrain track realignment projects should be designed -- as the Bayshore and Lawrence quadruplications inexcusably were not. (The exceptions are tracks in yards and terminals.)

“See general comments on headspan and portal structures above.”

“OCS infrastructure should be designed to facilitate, or at the very least not actively impede, such capacity amplification at all locations along the corridor where it is feasible to do so.”

**Response 2.3.7** As noted in EA/EIR Section 2.3.2.1 Overhead Contact System, portal structures would be used only where site-specific requirements dictate the need for this type of structure. Headspan and portal structures are used throughout the world for mainline multi-track supports. Pole placement is driven by track spacing, which is frequently governed by curvature and available right-of-way width. Aesthetics is a very important consideration in determining which OCS arrangement to use, and side poles, each serving one track only—which provides for maximum mechanical independence—is the preferred option. Center poles, positioned between and serving two tracks, are another option for multi-track support solutions. Headspans may have to be used, however, for multi-track supports, particularly where track spacing is limited due to alignment constraints. Site-specific requirements and restrictions may dictate selection of the particular OCS arrangement for that segment of the route.

Pre-stressed concrete poles used in the past for OCS construction have performed badly. Steel poles of various sections—H-section, cross-braced double channel, four-angle lattice structures, round/square/rectangular tubes, either parallel-sided or tapered—have been the pole types of choice throughout the world. For the Caltrain project, initial design concepts have been based on the use of steel H-section, square and rectangular parallel-sided steel tubes, and round tapered steel tubes that would be used as needed for particular applications—for example, near the historic stations. Steel poles provide great flexibility, particularly for drilled attachments, are low cost, and offer excellent lifecycle performance.

### **2.3.8 Martin Wasiak, May 24, 2004**

“In section 2.3.2.1, you mention that the catenary might have to be de-energized to allow freight operations. Why is that the case when the catenary is supposed to be outside the dynamic envelope of the vehicles? Do you envision freight trains to scrape the wire in certain locations?”

**Response 2.3.8** The[PU1] OCS is being designed to be clear of the Association of American Railroads (AAR) Plate H gauge *for the freight trains currently running on each section of the line. Sufficient clearances will be designed into the system to ensure that the energized wire and other components do not come in close contact with trains moving on the system.* Some of the existing overpass bridges on the Caltrain corridor do not have sufficient headroom to provide for the full electrical clearances between the bridge and the *dynamic plate gauge.* Further works including *under-cutting the tracks or modifying the bridge structures to increase the vertical clearances may be required in these instances.* Although there is sufficient mechanical clearance at bridges to allow passage of oversized loads, *without the cars scraping the wire,* de-energization of the OCS may be required under *special circumstances such as emergency movement of oversized equipment.*

### **2.3.9 Francis Wong, San Carlos Hearing Speaker, May 1, 2004**

“Good morning and thanks again for having an accessible Saturday hearing. Two areas of comment: one is on the interaction between VTA electrification in Mountain View and Caltrain Tamien station. That’s a 750-volt DC trolley and it will be, in both locations, parallel to our proposed 25kV trolley and I expect there will be inductive forces exerted on the VTA and the impact and mitigation was not addressed in the document and that may pose a severe technical problem.”

**Response 2.3.9** Typically there is no more effect between parallel 25 kV ac and 750 V dc overhead contact systems than occurs between parallel utility distribution lines and a 750 V dc OCS, and considerably less than occurs with paralleling high voltage transmission lines. Recent 25 kV ac and 750 V dc systems have been successfully completed and, to date, there are no known impacts on either system. These systems are the new Amtrak 25 kV ac Northeast Corridor system that parallels the MBTA third rail Orange line just south of Boston, MA, the Amtrak 12 kV ac OCS that parallels the Baltimore MTA LRT 750 volt dc OCS lines in Maryland, and the New Jersey Transit Hudson Bergen LRT Line 750 dc OCS that parallels the NJT 25 kV ac system coming into Hoboken terminal, NJ.

### **2.3.10 Francis Wong, May 14, 2004**

“Para 3.15.1, page 3-151. How is it proposed to separate the 600 volt dc electric trolley bus (ETB) wires and the OCS at the Common Street crossing, San Francisco? A grade separation is the only practical solution here.

“Para 3.17.4, page 3-151. A 25Kv OCS imposes strong inductive currents on paralleling wires. Protection needs to be provided for equipment, vehicles, and workers on adjoining transit facilities. There are multiple 600 volt dc, 750 volt dc and 1000 volt dc power distribution systems that will be difficult to reroute: 7th St, Townsend St, Common St (Muni ETB), King St (Muni light rail), Bayshore station (Muni light rail), San Bruno to Millbrae (BART), Mountain View (VTA light rail), Tamien (VTA light rail).”

**Response 2.3.10** *Agree. Grade separation of Common Street is a practical solution, but is outside the scope of this project.* Please refer to the responses to Comment 2.3.1 and 5.1.1, regarding the interface issues at Common Street, San Francisco. Please refer to the response to Comment 2.3.9 regarding inductive influences and effects on paralleling low voltage dc OCS conductors. During final design, grounding and bonding issues would be addressed, including measures for paralleling cables, as would safety considerations for maintenance staff working on these paralleling systems. Major effects are not anticipated and satisfactory protection would be effected by implementing normal safety procedures that are enforced when people work on or adjacent to potentially energized equipment.

## **2.4 TRACTION POWER STATIONS**

### **2.4.1 U.S. Environmental Protection Agency, Lisa B. Hanf, Manager, Federal Activities Office, May 25, 2004**

“...Road Development

“The Caltrain Electrification Program will construct 13 traction power facilities in selected locations along the Caltrain Corridor with electrical conduits between the facilities. The Environmental Assessment (EA) states that electrification will require the construction of access roads between power facilities and the Caltrain right-of-way (p. 3-11 & p. 4-3). The EA does not provide all estimates of the number, length, and location of new roads required for electrification, nor does it disclose the potential environmental impacts of new road development. Roads required for project construction and operation for Caltrain electrification are connected actions (40 CFR Part 1508.25(a)) pursuant to the National Environmental Policy Act (NEPA) and all direct, indirect, and cumulative impacts of new road development should be analyzed through the environmental review process.

“Recommendations:



"Describe the number, length, and location of proposed roads required for the Caltrain Electrification Program and disclose the direct, indirect, and cumulative impacts that these roads will have on environmental resources, specifically air quality and water resources. Clarify whether new roads will be permanent or will be removed and revegetated following project construction."

**Response 2.4.1** *With the project as revised, there is only one short (about 40 ft.) proposed new access road to the PS-7 site. The greatest use of this access road would be during construction of the PS-7 facility. Post construction, this facility would be visited only for routine maintenance and inspection. The indirect effect of this gravel roadway in terms of air emissions, noise, or traffic circulation would therefore be negligible. Right-of-way or an easement to construct the access path would need to be acquired; the availability of access was considered in identifying parcels for siting of traction power facilities. No residences would be affected.*

As appropriate, connections to existing streets would require curb cuts and drainage and sidewalk modifications, which would be paved. But the roads themselves would not be paved. They would be formed from compacted crushed rock or gravel overlaying a compacted sub-grade; thus there would be minimal increase in impervious surface, negligible effects on storm water runoff, and no measurable increases in contaminant loads that would percolate into groundwater.

**2.4.2 California Department of Conservation, Division of Land Resource Protection, Dennis J. O'Bryant, Acting Assistant Director, May 14, 2004**

"The Department of Conservation's Division of Land Resource Protection (Division) monitors farmland conversion on a statewide basis and administers the California land Conservation (Williamson) Act and other agricultural land conservation programs. The Division has reviewed the above EA/DEIR and offers the following comments.

"The project addresses the possible conversion of Caltrain from a diesel-hauled to an electric-hauled mode. Electrification would involve 180-200 single-track miles for an overhead contact system and 13 traction power station facilities.

"Alternatives for location of one particular substation (ATF-3 and ATF-3 (Alternate)) would result in the loss of .53-acre farmland and possible public acquisition of .53-acre of land under active Williamson Act contract.

"The EA/DEIR provides a brief description of the Williamson Act and notes that public acquisition would require that the Director of the Department of Conservation and the Santa Clara County Planning Department be notified. The EA/DEIR also notes that public acquisition of contracted lands requires that the project proponent demonstrate that there is no other noncontracted land on which it is reasonably feasible to locate the public improvements.

"The Williamson Act also includes state policy for locating public improvements on lands in agricultural preserves and especially under Williamson Act contract. The Final EIR (FEIR) should supplement the Williamson Act discussion with the following state policies regarding public acquisition and locating public improvements on lands in agricultural preserves and on lands under Williamson Act contracts. (See Government Code §51290-51295, attached, for further details.) The FEIR should also discuss any specific findings that apply and support the location of public facilities on contracted lands.

- "State policy to avoid location of any federal, state, or local public improvements and any improvements of public utilities, and the acquisition of land, in agricultural preserves.
- "State policy to locate public improvements that are within agricultural preserves on land other than land under Williamson Act contract
- "State policy that any agency or entity proposing to locate such an improvement, in considering the relative costs of parcels of land and the development of improvements, give consideration to the value to the public of land, particularly prime agricultural land, within an agricultural preserve.

"Thank you for the opportunity to comment on the EA/DEIR. If you have questions on our comments, or require technical assistance or information on agricultural land conservation, please contact the Division at 801 K Street, MS 18-01, Sacramento, California 95814; or phone (916) 324-0850."

**Response 2.4.2** *The project involves electrification of the Caltrain line from its northern terminus at the 4<sup>th</sup> and King Street Station in San Francisco to three miles south of the Tamien Station in San Jose. With this change there is no longer any potential for impacts to agricultural lands, whether under Williamson Act contract or otherwise.*

**2.4.3 City of San Mateo, Department of Community Development, Stephen Scott, Principal Planner, May 14, 2004**

**"...2. Sections 2.3.2.3, 3.1.3 & 3.9.1.2 & Figures 2.3-10 and 3.1.1:** Paralleling Station PS-4 is stated to be located on land that would be vacated following relocation of the Hillsdale Station northward sometime in the future. Given the size and utilitarian character of these structures, the City believes this there are potential adverse/significant land use and visual impacts requiring additional mitigation.

**"3. Section 3.1.3 and Section 3.9.2.2:** The City of San Mateo has an approved 'EL Camino Real Master Plan' (ECRMP) that governs the site of the proposed location of PS-4. In general, the objectives of the ECRMP are to enhance the character of El Camino Real through a variety of public and private improvements that result in a safer, more attractive pedestrian environment. An ECRMP goal for the precise area of the proposed PS-4 location states, 'Encourage mixed-use development as part of an expanded transit station area plan associated with the relocated Hillsdale Caltrain station. This plan may also require special design review consideration.' (pg.117) The proposed location of PS-4 would not be consistent with the ECRMP.

"The City of San Mateo has also been processing the "Rail Corridor Transit-Oriented Development Plan" (Corridor Plan) plan for the area between the Hillsdale and Hayward Park Caltrain stations. While the project is not yet approved, it has been undergoing an intense public review process for the past 5 years and will be in final public hearings within the next several months. The Corridor Plan proposes establishment of a new "TOD" zoning classification that includes the area shown for the location of PS-4. The Corridor Plan provides for transit-oriented development within the immediate vicinity of the relocated Hillsdale Station, including the area where the existing station is located. Included within conceptual site plan is a mix of retail, office and residential uses adjacent to the station. Parking structures to service both private uses as well as JPB parking for the new station are also conceptually located in this immediate vicinity. The EA/DEIR should acknowledge this planning process, the potential zone change, and the resulting inconsistency of a parallel station use within the TOD zone.

"The City has been working with JPB staff on a conceptual station design, including discussion of multi-modal access, type of structure for the raised grade, parking needs and location, and so forth. However, the location of a paralleling station of the size and visual character as displayed on Figure 3.1-1 would result in a significant visual impact upon this area and the transit village character and improved pedestrian environment intended to be created in this area.

"For the reasons stated above, the City requests that consideration be given to adding language in Section 3.1.3 that provides specific mitigation for the visual impacts created by PS-4. We also request modifying Section 3.9.2.2 to recognize the land use inconsistency between the PS-4 use and the ECRMP and anticipated Corridor Plan policies and goals. The mitigation could speak to undergrounding, relocating, or redesigning PS-4 to eliminate visual impacts and be consistent with the ECRMP and the anticipated policies, goals and objectives of the Corridor Plan."

**Response 2.4.3** *Since these comments were made, a new PS-4 site within Caltrain right-of-way has been identified that is surrounded by commercial and transportation uses. As assessed in Section 3.1.2 of the Final EA/EIR, the PS-4 facility would be consistent with the City's land use designation, and would have no substantially adverse impact on surrounding land uses. Hence, a no-impact conclusion is appropriate for land use.*

*Power supply facilities are utilitarian by nature and it is not easy to change that appearance. Undergrounding of this type of facility is not very practicable, due to clearance requirements and because cooling of the transformers is reliant on air circulation. The text of EA/EIR sections 3.1.3, 3.9.1.2, and 3.9.2.2 have been revised to address visual and land use concerns regarding the proposed location of PS-4.*

#### **2.4.4 City of Mountain View, Matt Pear, Mayor, May 18, 2004**

“...Power Distribution Station Siting

“Another concern is the proposed siting of a power distribution station, or paralleling station, in Mountain View. The EIR proposes to locate the paralleling station on the soon-to-be-constructed efficiency studio site. Caltrain staff has been alerted to the matter and are aware an alternate location for the paralleling station will need to be identified.”

**Response 2.4.4** *The subject comment is in reference to the proposed PS-5 facility. Since the comment was made, Caltrain has selected a different location for the facility. The new location is within JPB right-of-way across from the Alma Street/Greenmeadow Avenue intersection. There are no identified land use conflicts at this location.*

#### **2.4.5 Redwood City, Planning & Redevelopment, Gary Bonte, Associate Planner, May 19, 2004**

“Thank you for the opportunity to review and comment on the draft EA/EIR on the proposed Caltrain Electrification Program. The following are comments and concerns regarding the electrification, potential impacts as they might pertain to Redwood City, and recommended mitigation.

##### **“...Substations**

“The Redwood Junction Wye is being proposed as a location for a switching substation. Although this site is located just outside of Redwood City in an unincorporated area, will the proposed substation require installing new high-voltage lines to connect with the PG&E system?”

**Response 2.4.5** The paralleling stations and switching stations require a connection to the usual utility distribution network that serves residential and commercial customers. Typically, this is medium voltage 4.8 to 12.5 kV, three phase ac supply. The high voltage 25 kV single phase ac supply to the paralleling and switching stations comes from the parallel feeders, mounted on the OCS poles. These feeders would run the full length of the route on poles on each side of the alignment. The parallel feeders are depicted in the OCS Typical Arrangements, shown in Figures 2.3-1, 2.3-2 and 2.3-3 in the environmental document. There would be no requirement for a high voltage supply from PG&E.

#### **2.4.6 City of Santa Clara, Geoffrey Goodfellow, Director Planning and Inspections, May 25, 2004**

“The City of Santa Clara Planning Department has had the opportunity to review the EA/EIR for the proposed Caltrain Electrification Program and has prepared comments, listed below, that should be addressed in the Final EA/EIR for this project.

“The EA/EIR provides the location of the proposed supply substations, switching stations and paralleling stations for the power supply system and references alternate locations under consideration. Section 2.3.2.2 states: “In each case, JPB would first seek to purchase the site labeled as “A” and would consider the alternative sites (labeled “B” and “C”) in order if the previous letter site could not be obtained.” It is not clear as to where this information is presented. Graphics and parcel data should be provided identifying the locations of the alternate sites, and referenced in the document, to allow each jurisdiction the ability to assess potential conflicts or impacts of the alternate locations.”

**Response 2.4.6** *Because it cannot be assumed that the property will be available for the preferred sites, alternate sites were evaluated for the two primary substations and these are depicted, together with parcel information, in Figures 2.3-8, 2.3-14, and 2.3-15. A preferred or best site has been identified for each location in Section 2.3.2.3 of the EA/Final EIR. Paralleling and switching stations are relatively small and adequately-sized sites are available. Final site selection will be coordinated with local authorities during final design of the electrification systems.*

#### **2.4.7 Bay Rail Alliance, Margaret Okuzumi, May 25, 2004**

"We'd like to see the following items addressed in the final EIR:

- "Substations. Given additional miles of electrified line on multiple tracks, as Caltrain expands to a quadruple-track line and increases service, will additional substations be necessary?"

**Response 2.4.7** It is not anticipated that additional traction power substations will be required to adequately accommodate the planned expansion of the Caltrain alignment to four tracks. Service levels were projected at headways of 5-minutes in each direction during peak periods.

#### **2.4.8 Richard Mlynarik, May 24, 2004**

- "...S-6 section S.2.2.3: Attention should be paid to ensuring that substations are not oversized and overpriced for Caltrain's needs -- and not over-intrusive in their environment. Ideally, physical expansion capacity should be reserved for added power requirements of future high speed rail, or future 10 train/hour service, etc. Where feasible, electrical facilities should also be designed to minimize NIMBYism and not just specified according to the wildest dreams of power engineers.

- "2-14 figure 2.3-5: The identified location for PS-1 may be needed for a combination of DTX construction and 16th/Common Street grade separation, despite the fact that neither Caltrain nor TJPA engineers seem to have understood this yet.

"Further investigation should be undertaken to ensure that there is no potential conflict with these projects. A modest relocation within the identified parcels may be all that is required.

- "2-16 figure 2.3-7: The proposed site for ATF-1A could have other development potential. Are less desirable sites closer to, say, the Oyster Point or Grand Avenue overpasses, not feasible?

"It would be interesting to examine whether the 115' by 120' site size requirement is necessary (due to physics and/or regulation), or whether there is some degree of NECIP over-engineering involved. I do not know the answer. Peer review of 25kv traction substations could be used to help understand the requirements and perhaps to help fit the substations and other facilities within the surrounding urban and urban-industrial environments.

- "2-19 figure 2.3-10: PS-4 appears to be sited directly within the parking lot of the existing Caltrain station. Is it supposed that relocation of the station to the vicinity of 25th Avenue will have occurred by the time electrification is installed or soon afterwards? This seems a problematic location otherwise.
- "2-21 figure 2.3-12: PS-5 should be situated between Caltrain tracks and expressway on east side of the tracks if possible; that location is less intrusive, there is no other use possible; and there is less pedestrian access. Or perhaps space could be found underneath the off-ramps connecting the Central Expressway with the San Antonio Road overpass. Despite the 'Commercial/Office/Industrial Land Use designation' of the identified parcel for PS-5, it seems that higher uses should be possible for it than a Caltrain autotransformer station.
- "2-23 figure 2.3-14: ATF-2 should be sited into the Newhall Yard, slated for purchase by VTA (and the future site of the Caltrain CEMOF once the Newhall site nonsense and BART extension insanity run their courses.). In fact, VTA's SVRTC 'project' (nudge, nudge, wink, wink) identifies the south-east section of this yard as the site for a BART feeding station.

"Caltrain should explore the availability of real estate within the Newhall Yard with VTA.

"If available, this should be the preferred alternative for the southern substation for the Caltrain system.

- "2-24 figure 2.3-15: Locating an open-air substation on an over-sized and prime lot right beside a major railway station is a crazy urban design decision—admittedly not as crazy as VTA's plans for surrounding the station with parking structures, of course.
- "I suggest this ATF-2B location alternative be dropped from consideration.
- "2-30 section 2.3.2.3: It would be useful to provide information on what level of train service (speed, headways) the specified 2 x 60MW power system is designed to accommodate as built, and what future levels of traffic might be powered by upgraded substations occupying the same footprint.

"At first glance, it certainly seems that the industrial-sized substations depicted are out of scale with what the traveler would encounter alongside and powering railway lines in Europe or Asia, and it is widely believed that the NECIP installations (pictured) were over-constructed. Do technical peers specify similar installations?

- "3-75 section 3.9.1.2: See comments above on TPS placement, referencing pages 2-16 through 2-24.

**Response 2.4.8** Please refer to response to Comment 2.4.7. Since the traction power equipment—circuit breakers, transformers, and disconnect switches—typically offer an in-service life of 50-75 years, based on utility and other electrification project experience, it is critical that they are correctly sized. To satisfy that requirement at the preliminary engineering stage, it is essential that the major capital cost facilities, like the substations, paralleling stations and switching stations—and their associated land acquisition—are designed to support the anticipated ultimate operating scenario. During final design, the possibility of phasing the construction: installing one transformer and its associated circuit breakers and switchgear, instead of the ultimate two units, will be addressed.

The design requirements for and location of PS-1 are being closely coordinated with development of the DTX engineering.

*The proposed preferred and alternate locations for TPS-1 (formerly referred to as an ATF station) have been moved; refer to Figure 2.3-8 of the EA/EIR.*

The goal in siting the substations was to ensure their immediate proximity to 115 kV transmission lines and their compatibility with proximate land uses to avoid adverse impacts. Size requirements, particularly for the substations, are dictated to a large extent by the clearances needed for installation of 115 kV and 25 kV equipment and buswork.

*The proposed locations for both PS-4 and PS-5 have been moved, partially in response to potential siting issues raised during the Draft EA/EIR comment period. As noted above, additional coordination with local jurisdictions will occur in this regard during final design.*

*The proposed preferred and alternate locations for TPS-2 (formerly referred to as an ATF station) have been moved; refer to Figure 2.3-14 and 2.3-15 of the EA/EIR.*

As noted above, the 2x60 MW substations have been designed to support train operations at 5-minute headway in both directions during peak periods. The maximum authorized speed was assumed to be 90 mph for Caltrain operations.

Caltrain engaged the services of an international peer group, which confirmed the correctness of the 25 kV system design approach and engineering basis.

## **2.5 OVERBRIDGE PROTECTION BARRIERS**

### **2.5.1 Richard Mlynarik, May 24, 2004**

“Specific comments on individual pages of the document:

- “S-7 section S.2.2.4: Transparency of bridge barriers is more an issue for pedestrians than just the cited ‘motorists’.

“The horrid design mistakes of the Amtrak NECIP must not be repeated, in which massive steel plates were affixed to urban overpasses, blocking all views from the bridges in the service of some very dubious idea of “safety” -- or perhaps just unthinking expediency.

- “2-37 section 2.3.2.4: Again, the NECIP mistake of using opaque bridge protection barriers must be avoided.”

**Response 2.5.1** The text has been modified in Section 2.3.2.5 (*formerly 2.3.2.4*), Overbridge Protection Structures, to include reference to pedestrians. The Northeast Corridor designs were predicated on the need to prevent snow being plowed up and over the bridge parapets, leading to icicle formation and potential faults and power outages, a condition that does not apply in the Bay Area. The *new* Caltrain Electrification EA/EIR Section 2.3.2.5 clearly states that solid, opaque barriers are not proposed for the Electrification Program.

## **2.6 PROPULSION OPTIONS**

### **2.6.1 San Mateo County Transportation Authority CAC, Doris J. Maez, San Carlos Hearing Speaker, May 1, 2004**

“...In the air quality reductions that are stated, even in the report it says using liquefied natural gas was simply not considered because it didn’t electrify the train; I think that’s a very weak argument...I really was concerned that alternative fuel was not considered and also dual use locomotives that Onnolee suggested were not looked at.”

**Response 2.6.1** Please see response to Comment 2.0.1 for a discussion of clean diesel. Please see general response: Electrification and Transbay Terminal / Downtown Caltrain Extension Project for more information on dual mode locomotives.

### **2.6.2 Martin Engel, May 25, 2004**

“I oppose the plan to electrify the Caltrain commuter system. Here’s why:

“...Power generated for electrification transfers the pollution from locomotives to power substations.”

**Response 2.6.2** Total air pollution generated by an electrified Caltrain would be substantially less than under diesel-powered operation even after taking into consideration the air pollution emitted at the power generation plants. As shown in Table 3.3-5 of the *Caltrain Electrification EA/EIR: Emissions Comparison Summary (Five-Car Trains)*, electrified operations, including the emissions resulting from the generation of electricity to power the trains, would produce substantial reductions in corridor air pollutant emissions compared with continued diesel operations. The total year 2035 emissions from electrified train operations including power generation would be from about 25 tons/year of PM<sub>10</sub> to 707 tons/year of NO<sub>x</sub> less than diesel train emissions. Electrification would not be simply transferring pollution, but reducing it in total.

### **2.6.3 Jim Stallman, Sunnyvale Hearing Speaker, April 24, 2004**

“This is kind of looking at rolling stock. When VTA was looking at new buses, they refused to look at future fuel availability and fuel costs. Needs to be embedded in the report. What happens at the end

of the decade when oil gets scarce? Fuel costs and whether this is big factor. The implication of operating costs translates into service. Whether you stay with oil based or get off of it.”

**Response 2.6.3** The Caltrain Electrification EA/EIR (Section 2.3.3) presents operating cost information under electrification. One of the benefits of electrification is the stability of costs for electric power compared to diesel fuel (please see general response: Caltrain Electrification Benefits).

## **2.7 ROLLING STOCK OPTIONS**

### **2.7.1 Bay Area Air Quality Management District (BAAQMD), Jack P. Broadbent, Executive Officer/APCO, May 25, 2004**

“The EA/DEIR project description discusses three rolling stock options for the Caltrain Electrification Program, but the document does not identify which is the preferred alternative. Based on our understanding of current electrified rail technology, electric multiple units (EMU's) are the most energy efficient, resulting in the least air quality impacts. We recommend that the Final EIR include a comparison of the emissions from the different rolling stock alternatives as part of the air quality impacts analysis. We recommend that maximizing emission reductions be a primary consideration in selecting rolling stock.”

**Response 2.7.1** The JPB has identified *in the final environmental document* the EMU option as the preferred option for new electric rolling stock. Part of the reason for that decision was, as noted in the comment, because EMUs are more energy efficient than electric locomotive-hauled gallery cars. EMUs would consume about 95% of the energy required for either of the other two rolling stock options. Since EMUs consume less energy than electric locomotive hauled gallery cars, fewer fossil fuels are burned to generate the electrical energy required to power them and therefore they also result in lower air pollutant emissions.

### **2.7.2 Santa Clara VTA, Roy Molseed, Sr., June 30, 2004**

“Page 2-43, Section 2.3.2.6, Second paragraph: Please clarify future fleet plan mix of diesel and electric locomotives, number of diesel locomotives sold, how many will be kept. This section seems to indicate that 5 diesel locomotives will be required to operate “each” (Dumbarton and Monterey County) service, which would mean retaining 10 diesel locomotives. Later in the paragraph, it is indicated that 6 Baby Bullet locomotives would be used for these two services plus a least another 5 diesel locomotives for contingencies, equaling 11. Table 2.3-4 shows keeping only 5 diesel locomotives. The Dumbarton Rail project Initial Project Report shows Dumbarton service will purchase new rolling stock, not use existing Caltrain diesel locomotives.”

**Response 2.7.2** *Table 2.3.2 has been revised to show the rolling stock mix under the San Francisco - San Jose electrification corridor. Within the electrified corridor, it would still be possible to operate diesel-hauled trains below the energized OCS. Caltrain's current plan is to retain up to nine diesel locomotives for use between San Jose and Gilroy, and when the OCS is deenergized (e.g. during maintenance).*

### **2.7.3 San Mateo County Transportation Authority CAC, Doris J. Maez, April 30, 2004**

“Although not stated in the EA/DEIR, another justification for electrifying the Caltrain line is compatibility of equipment with the downtown Transbay Terminal project, since existing diesel trains cannot operate underground. However, the TBT/EIR states that the extension could still be implemented using dual-mode (diesel-electric) locomotives at a cost of \$235M. for 34 locomotives (p. 2-3, TBT/EIR). Since diesel service is anticipated on the Dumbarton Rail service and Monterey-Salinas routes, why aren't dual mode locomotives considered as an alternative?”

**Response 2.7.3** Please see general response: Electrification and Transbay Terminal / Downtown Caltrain Extension Project. The purpose of this document is to assess the impacts of electrifying the existing Caltrain mainline from the 4<sup>th</sup> and King Streets terminus to San Jose. Dual

mode locomotives do not enter into consideration for this project, since the *51-mile corridor* would be operated electrically under the *Electrification* Alternative, or remain diesel-hauled under the *No-Electrification* Alternative. Dual mode locomotives are more complex than single mode vehicles, since they must be capable of operating from two very different energy sources. This additional complexity adds to their capital cost and increases operating and maintenance costs. Dual mode locomotives would be needed if the Transbay Terminal/Downtown Caltrain Extension/Redevelopment Area project were constructed without the Electrification Program in place, and this possibility is discussed in the environmental document for the Transbay Terminal project. Use of dual mode locomotives would be addressed during the technical and environmental evaluations of *future* proposed expansions of Caltrain service.

#### **2.7.4 City of Mountain View, Matt Pear, Mayor, May 18, 2004**

"Electric Multiple Units

"It is unclear if the EMU scenario incorporates possible cost increases which may arise as a result of manufacturing specialized units to meet U.S. standards. The EIR should include a discussion of additional costs which may arise if this option is considered."

**Response 2.7.4** Costs for the EMU option are based on the assumption that a prototype proving program would be required for a new vehicle design since, as noted in the EA/EIR, there is no existing multi-level EMU car that would be suitable for the proposed Caltrain service.

#### **2.7.5 City of Sunnyvale, John Howe, Mayor, May 12, 2004**

"...It is not clear why one of the rolling stock options is to replace the present Caltrain fleet of trailer cars so that they can be pulled by electric locomotives. The existing fleet is described as compatible with electric locomotives, and keeping the present fleet is one of the options. So, excluding the noise analysis, the FEIR shall explain why a fleet replacement option is included in the study. It is true that gallery cars may be considered functionally obsolete but their replacement for that reason should not be attached to the unrelated electrification project.

"The DEIR report also does not mention that Caltrain has recently acquired new Bombardier bi-level coaches for use on the express CTX service, or describe their compatibility with electric locomotives or highlight the conclusions of the noise study, that these new cars are more quiet. The Final EIR shall incorporate consideration of the new Bombardier coaches, describe their compatibility with electric locomotives and relate the existing coaches' operation to the noise study of electrification. Taken together with the unavailability of compatible multiple unit electric vehicles (see above), the inclusion of rolling stock replacement in the project scope confuses the assessment of benefits and impacts of electrification, as it goes to the essence of the project purpose. Complete replacement of rolling stock also raises other issues and is very complex. For example, the wheelchair access to the present fleet is inconvenient and slow, requiring either lifts on the gallery cars or bridge plates for the new bi-levels. If a completely new fleet is contemplated, the objective should be to provide level platform boarding. This might entail platform modifications, etc. The public shall be advised of these matters and the FEIR shall do so."

"...Scope of Alternatives and Their Benefits: On the first page of the report (S-1) is the statement, "Electric trains can accelerate and decelerate at better rates than diesel powered trains" (see also Section 2.3.2.6). Although this is perhaps the most compelling benefit described for the proposed project, nowhere in the report is there any data to substantiate this claim.

"While one would suppose that it is probably true that multiple unit (MU) self-propelled electric vehicles, with motors on each car, could indeed improve on the acceleration of locomotives, the report does not define MU rolling stock as central to achieving the goals of the project. Multiple unit rolling stock is only one of three rolling stock options. Also, the report admits on Page 2-39, last paragraph, that there is no existing MU rail vehicle type that is of the correct configuration for service on Caltrain. The other two rolling stock options would use electric locomotives, which are available



off-the-shelf, and therefore are actually much more likely to be part of the actual project. The report (Table 2.3-7) also fails to identify sufficient funding sources for MU fleet conversion.

"There is no quantitative data on the acceleration deceleration characteristics or power weight ratio information on either diesel locomotives, electric locomotives or MU electric vehicles. The FEIR shall explain why an electric locomotive, even if more powerful, could better a diesel when pulling a short Caltrain of five (or even a few more) cars.

"All of the rolling stock options as described in Section 2.3.2.5 are lumped together under one Alternative, so that travel time, ridership, etc. is supposed to be the same for the MU and locomotive options. This undermines the premise that acceleration would be improved as there is no comparison of performance between locomotives and MU vehicles."

"There are also other implications for MU vs. electric locomotives. The maintenance facilities required should be configured differently. An MU fleet would be more flexible to operate, with very short trains possible off-peak and longer ones during peak periods. More frequent service might be the trend, using shorter MU consists, thus yielding a higher level of passenger service. Perhaps the crew requirement on each train could be reduced to lessen the labor cost component. With more frequent trains, individual train capacity could be less, thus conventional, single-level, off-the-shelf North American MU cars might be feasible. These are some of the potential benefits of an MU fleet that electrification could make possible. These scenarios shall be addressed in the FEIR in order to provide a complete assessment of the MU alternative."

"...11. Consideration of Reasonable Alternatives: The DEIR contains a copy of a City of Sunnyvale letter of September 15, 2000 on the scope of the analysis, bound into an appendix. That letter states that there should be 'a reasonable range of alternatives', including light rail (LRT), addressed in the JPB study. This did not happen.

"Information in the DEIR indicates that electrification by conversion only to electric locomotives but not to multiple unit (MU) self-propelled electric cars, would probably fail to achieve many of the original project goals. Based on the report, it seems that suitable MUs are not available in a configuration (double deck cars) that the JPB believes that it needs. Nor is there sufficient funding identified for full MU conversion.

"If MUs are not acquired, then there are much reduced benefits to the project. The report failed to analyze all the operational and cost differences, advantages and disadvantages between MUs and electric locomotive-hauled trains.

"But if MUs are desired as the goal, then light rail vehicles (LRVs) should also be an alternative, because the entire Caltrain fleet would then need to be replaced. As it currently is reported, fleet replacement with electric locomotives and new bi-level coaches is the preferred alternative. LRVs are now available with 65 mph speed capabilities, and there are examples in Europe that have much more attractive passenger amenities than any in use in North America. Light rail would have the following advantages:

- "Smaller crewing requirements, hence;
- "Ability to run more frequent service at lower cost
- "Potential through-running of LRV trains from Santa Clara VTA lines to San Francisco MUNI lines, and;
- "Caltrain could get to SF downtown by sharing the proposed MUNI subway, instead of a separate mega-project to the Transbay Terminal
- "Potential for future LRT spur line development to major activity centers such as Stanford University and the airports, etc.
- "Less costly grade separation, due to steeper hill-climbing ability
- "Faster emergency stopping ability with electromagnetic track brakes
- "More convenient handicapped/wheelchair access

"There are also disadvantages and complexity of course, to this or any alternative. There should be a public debate on the subject, however. The FEIR shall include an analysis of an LRT alternative, as requested in the scoping letter sent by the City of Sunnyvale September 15, 2000."

**Response 2.7.5 Rolling Stock Options** – Replacement of the entire fleet of Caltrain passenger cars was considered as an option to demonstrate the sizeable noise reduction that can be obtained with modern designs of passenger rolling stock. *In terms of the project's stated purpose to reduce noise*, it is clear from the noise analysis that improved rolling stock would result in overall better performance *compared with* other options.

Section 2.3.2.6 of the EA/Final EIR reports that Caltrain has identified electrical multiple units (EMUs) as the preferred rolling stock option to be implemented in 2015 when much of the existing rolling stock would need to be replaced or rehabilitated. The exact design of the EMUs would be completed under final design during the coming years and would consider many of the ideas raised in this and other comments. Please see general response: Rolling Stock Planning.

**Bombardier Coaches** – The new Bombardier coaches are compatible with electric locomotives. The noise analysis describes and assesses the noise that would be generated by both locomotives and passenger cars, and evaluates both the existing gallery cars and cars similar to the Bombardier coaches. The noise characteristics included in the EA/EIR noise analysis for complete fleet replacement are representative of the new Bombardier coaches hauled by electric locomotives. However, as noted in the comment, electrification is only one consideration in the selection of new rolling stock.

**Acceleration Rates** – Section 3.15.5.1 in the EA/Final EIR has been revised to document the reduced travel times that would result from the improved acceleration and deceleration rates of the electrically-hauled rolling stock options that were evaluated in the EA/EIR as the basis for electrified rail service (see specifically Table 3.15-6 which presents running time under electrification). A major transportation benefit of electric traction over diesel traction is that electric trains can accelerate and decelerate faster than diesel trains and that it enables Caltrain to run longer consists without degrading speeds. This is a very cost-effective way for Caltrain to serve more riders during the peak period than running more and shorter trains.

**LRT Alternative** – The EA/EIR has been revised to include Section 2.4.6 that discusses why operating light rail transit (LRT) on the Caltrain right of way would not be a reasonable alternative. Generally accepted transportation planning begins with the concepts of demand, distance, and time. Different approaches are used for different combinations of these three variables. Light rail transit is best suited to moderate demand, short distances, and medium speed. Commuter rail is designed to serve higher demand over longer distances and with faster speeds – exactly Caltrain's market. While the options of electric multiple unit (EMU) and light rail transit (LRT) vehicles are similar in the sense of requiring complete replacement of Caltrain's rolling stock, the operational characteristics of these two types of vehicle are very different. EMUs, designed for commuter rail systems, are faster and carry passengers in more comfortable seating better suited to longer distances and longer trip times than LRVs, and thus are far more appropriate for Caltrain. Finally, LRT vehicles are, by FTA regulation, not compatible with the freight and heavy rail operations that will continue to operate on the Caltrain alignment.

**2.7.6 Margaret Okuzumi, Executive Director, Bay Rail Alliance, Sunnyvale Hearing Speaker, April 24, 2004**

"Executive Director of Bay Rail Alliance, our organization has been very strongly supportive of electrification and we would like to see this proceeding.

"My question has to do with the cost estimates for the various EMU and locomotive options, because looking at EIR, maybe I missed it because the cost for just replacing the locomotives or getting EMUs, they look to be about the same, what EMU cost is based on, and are those FRA compliant. I have another question that is kind of related. Would it be possible to buy out UP freight operations...not having it running on the line. How much would that cost and maybe that would be worth doing, and you could save a couple of million on equipment."

**Response 2.7.6** Please see response to comment 2.7.5 and general response: Rolling Stock Planning.

Evaluating the cost of buying out Union Pacific's freight operations is well beyond the scope of the environmental analysis for the Electrification Program.

### **2.7.7 Bay Rail Alliance, Margaret Okuzumi, May 25, 2004**

"We'd like to see the following items addressed in the final EIR:

- "Time savings possible with EMUs and total passenger car replacement. The time savings benefit of the electrification project is presented as being the same regardless of the type of equipment chosen. However, we feel that dwell time at stations could be reduced considerably if new equipment provided level boarding and more doors, resulting in a significant benefit. The time savings, coupled with the added speed provided by electrification, may provide Caltrain with significant additional operational savings. We would like to see this analyzed in the EIR.
- "Operational savings possible with EMUs. We'd like to see a discussion of the reduced operating costs that may be possible with EMUs vs. electric locomotives. One advantage of EMUs is greater operational flexibility and ability to realize savings in operating and maintenance costs from varying the consist size to match passenger load (such as running shorter trains during non-peak hours).
- "Freight and FRA compliance. We urge you to avoid following the example of the Northeast Corridor. Please consider whether it would be possible to obtain an exemption from FRA requirements for Caltrain equipment, which would permit Caltrain to obtain suitable and proven electrified rolling stock much more cheaply and competitively.
- "FRA does allow temporal separation to permit non-FRA equipment and FRA compliant equipment to use the same track. Caltrain could explore temporal separation that many LRT agencies use to separate freight trains and LRTs along the same tracks. Caltrain should also consider different versions of separation, such as dedicating one track for freight use at night and maintain a two-way passenger traffic on another. Given the small amount of freight traffic on the Caltrain line, the ability to implement technologies, such as positive train control or automatic train stops, and operating rules to separate the two types of equipment, we believe a strong case could be made for the FRA to grant Caltrain an exemption from purchasing FRA-compliant equipment. This could save Caltrain hundreds of millions of dollars in operating cost as well as equipment cost.
- "Elimination of freight. Would it be possible to eliminate freight service from the Caltrain line, and what would be the environmental and revenue impacts? It seems to us that the potential savings that Caltrain could realize with the ability to purchase non-FRA equipment, and benefits from the ability to provide platforms designed for level boarding, would greatly outweigh the revenue loss from eliminating freight."

**Response 2.7.7** See response 2.7.5 and general response: Rolling Stock Planning. JPB has identified EMU rolling stock as the preferred rolling stock option for the Electrification Program Alternative. If the Electrification Program goes forward, detailed engineering for the EMUs would be completed; as part of detailed engineering, features such as those included in this comment will be considered.

Caltrain's Strategic Plan recognizes the importance of freight movement on the Caltrain corridor and its importance to alleviating truck congestion. Elimination of rail freight service on the Peninsula would have sizable costs and environmental impacts. Rail freight service is one of the most efficient means for transporting freight and there are still many customers served by rail on the Peninsula. Furthermore, in some cases (e.g. cement plants) it is almost impossible to provide raw materials using other means. Approval for freight line abandonment must be obtained from the federal Surface Transportation Board and requires in-depth analysis. Finally, Caltrain has an agreement with the UPRR that allows them to operate freight service on the *Peninsula*; Caltrain would likely need to pay for the right to terminate this agreement.

JPB does not currently anticipate the use of non-FRA compliant rolling stock. Too many different standard rail operations share tracks with Caltrain along the right of way including freight service, Amtrak, ACE, and *proposed* future Dumbarton and Monterey rail services to make this an efficient and cost effective option.

#### **2.7.8 Architecture 21, Michael Kiesling, May 25, 2004**

"The EIR should list the lifespan of Caltrain's existing rolling stock. This should include the original gallery car fleet, the second gallery car fleet, and the "Baby Bullet" Bombardier fleet. The report should consider the remaining lifespan of the equipment in the existing fleet and the lifecycle costs associated with maintaining the existing fleet into the future under the "Replace Locomotives Only" Option. List the net-worth remaining in the existing fleet to accurately show the true cost of partial or full fleet replacement.

"The EIR must consider the MOU between the Caltrain Peninsula Corridor JPB and the California High Speed Rail Authority (CHSRA). This MOU covers the anticipated operation of non-FRA compliant high speeds train on the Caltrain line, in mixed traffic with Caltrain. This MOU sets the stage for non-FRA equipment to run in the corridor.

"The EIR must consider the myriad of EMUs and passenger equipment available on the world market when discussing fleet replacement issues, and not simply discard an equipment option due to its non-FRA compatibility.

"The EIR should include simulations of operations under each rolling stock scenario to quantify the performance of each rolling stock option. This should include, if possible, the boarding performance of low(er) floor trains and multiple doors, and add this to the total time savings."

"...Manufacturers should be identified for a possible Design Build Operate Maintain scenario, and the EIR should list recent world examples of this method of procurement.

"Design should continue, regardless of project phasing or possible MOS strategies, for the entire San Francisco-San Jose project. Necessary track shutdowns for upcoming projects should allow for concurrent pre-construction activities for electrification. As the design progresses, foundations for OCS poles could easily be constructed while other work is performed."

**Response 2.7.8** See response 2.7.5 and general response: Rolling Stock Planning. In identifying the preferred EMU rolling stock option, Caltrain has taken into consideration the remaining lifespan of existing rolling stock. Revenue service would begin in 2015, when much of Caltrain's existing fleet will need replacement or major rehabilitation; this offers Caltrain a good opportunity to replace the existing fleet with improved vehicles. When developing its specifications for the new EMUs, Caltrain will take into consideration the recommendations made in this comment.

JPB does not currently anticipate the use of FRA-compliant equipment.

During final design, the JPB would evaluate in more detail available procurement options, including Design-Build-Operate-Maintain, to determine which contracting option would be most appropriate for the electrification systems projects.

Please see general response: Whether to Implement a Minimum Operating Segment of Electrification for discussion of minimum operating segments, Response 2.7.6 regarding the need for the new EMUs to share the right-of-way with standard railroad cars, and Response 2.2.29 for discussion of implementing electrification improvements as part of on-going Caltrain improvement projects.

#### **2.7.9 League of Women Voters of San Mateo County, Linda Craig, County Council Coordinator, Judy Orttung, Onnolee Trapp, Transportation Co-chairs, May 1, 2004**

"...We recognize that the document is an examination of the impacts of Electrification from 4th and Townsend to Gilroy, but are surprised that there is NO discussion of continuing the use of diesel along this distance while using electrification for the extension from 4th and Townsend to the Transbay Terminal by means of dual-mode locomotives. This is discussed in the Transbay Terminal

EIR, page 2-3 (the \$235 million cost was counted as an additional cost for the Transbay Terminal project). The equipment discussed as alternative options is limited to replacing diesel locomotives with electric, use of all EMU vehicles, or replacement of diesel locomotives with electric and replacement of all the gallery cars. Each option retains a "limited" amount of diesel service, for Dumbarton, Salinas, Monterey, and freight. Although the limited use of dual-mode locomotives could be regarded as the No-Project alternative, it should also have been considered as one of the options for new equipment (cost is between that of new electric locomotives and EMUs) for a project that is not going to happen in time for the Transbay Terminal completion.

"The Caltrain Strategic Plan, page 30, states that electrification funds "will not be available until 2014."

#### **"...Fleet Requirements**

"Table 2.3-4 defines Fleet Requirements for Electrification for 98 and 132 trains/weekday. Rolling Stock Options 1 and 3 define the costs of replacing diesel locomotives and passenger cars (Table 2.3-6) for Electrification System Costs. Data are lacking for cost of replacement of rolling stock for No-Project. Would there be NO replacements AND no new equipment needed to provide 132 trains/weekday in the No-Project scenario? If there would be equipment cost for No-Project, this needs to be included in the comparison of No-Project to Electrification so that the incremental cost is clearly stated."

**Response 2.7.9** See general response: Electrification and Transbay Terminal / Downtown Caltrain Extension Project and response 2.7.3 for information on the relationship between the two projects.

The EA/EIR has been revised to reflect the Caltrain Strategic Plan, which was finalized while the *Draft* EA/EIR was being circulated. The preferred alternative, as revised, is to *run 114 trains per day, including six diesel-powered trains in the San Jose to Gilroy segment, by 2015. Table 2.3-2 has been revised in this regard.* The preferred rolling stock option includes using funds originally anticipated for rehabilitation of existing rolling stock for purchase of new EMUs as suggested in the comment.

#### **2.7.10 League of Women Voters, Onnolee Trapp, San Carlos Hearing Speaker, May 1, 2004**

"...There are tables that talk about the numbers of locomotives and passenger cars needed, however, nothing in those tables speaks to no project: would you never have to buy new locomotives and passenger cars?"

**Response 2.7.10** *Table 2.3-1 of the EA/EIR has been revised to show numbers of diesel locomotives and trailer cars required by year under the No Action/No Project Alternative. In the event the Electrification Program Alternative does not go forward, JPB would still need to purchase new rolling stock for replacement purposes. The EA/EIR has been revised to reflect the preferred rolling stock option of purchasing new EMUs.*

#### **2.7.11 Roger Baird, Sunnyvale Hearing Speaker, April 24, 2004**

"Why weren't the two major locomotive suppliers in the U.S. being considered (GE & EMD)? Why weren't they considered as locomotive suppliers?"

**Response 2.7.11** The Electromotive Division (EMD) of General Motors and General Electric (GE) no longer manufacture electric locomotives and have not done so for many years.

#### **2.7.12 Andrew Cigolie, May 4, 2004**

"There should be the option of dual mode (diesel/electric) units being used for the Transbay/Downtown Extension. While I understand dual mode units are not desirable for a number of reasons, to electrify the entire line just to be able to extend the line into downtown seems a bit much. I would like to see the financial justification for that decision."

"I would like to see...credit to the electrification program for avoiding replacing the current diesel locomotives and cars. At some point the current equipment will need to be replaced. If they are replaced with electric equipment and electrification happens at the same time, this should be an overall savings to Caltrain."

**Response 2.7.12** See general response: Electrification and Transbay Terminal / Downtown Caltrain Extension Project regarding the development of the Electrification and Transbay Terminal projects to be complementary but able to be constructed separately. The EA/EIR has been revised to reflect the preferred EMU rolling stock option using funds originally anticipated for rehabilitation of existing rolling stock for purchase of new EMUs as suggested in the comment.

**2.7.13 Charlie Cho, San Jose, May 17, 2004**

"Buy out Union Pacific's trackage rights to the SF-SJ main line. By removing freight from the line, Caltrain can free itself from Federal Railroad Administration regulations on passenger car impact standards. These standards do little to enhance passenger safety while driving up weight and costs. FRA regulations, as noted in the EIR, severely limit Caltrain's choices in both EMUs and electric locomotives. Freed of these onerous regulations, Caltrain will be able to avail itself to many competitively priced, off-the-shelf, and well-proven EMU cars that will knock the socks off of the riding public. The savings in rolling stock acquisition alone could pay for the trackage rights. Lower track maintenance costs will continue forever. Operating the Gilroy extension separately, as noted above, using standard FRA-compliant equipment, would be a prerequisite.

"When considering rolling stock, consider the possibility of one-person train operation (OPTO). OPTO can allow more frequent service for the same labor cost, especially off-peak. Short trains every thirty minutes instead of long trains every hour at night and weekends will go a long way towards making Caltrain a true rapid transit system, not just a commuter railroad, maximizing the public's return on the electrification investment."

**Response 2.7.13** Please see responses 2.7.5, 2.7.6, and 2.7.8 as well as the general response: Rolling Stock Planning.

With the introduction of ticket vending machines and elimination of ticket sales on board the trains, Caltrain has already reduced the overall level of staffing required on trains. Electrification would improve the cost-effectiveness of peak period operations by enabling Caltrain to run longer train consists without degrading speeds. Operating more *and* shorter trains, rather than fewer *and* longer trains, leads to increases in both rolling stock and staff requirements, since that type of service needs both more locomotives and more operators.

**2.7.14 Gail Ghose, San Carlos Hearing Speaker, May 1, 2004**

"I have couple of questions, real short. Since this is projected to be completed far in the future, is there any possibility that hybrid technology could be built into the locomotives, one; two is there any consideration being given to retrofitting existing locomotives?"

**Response 2.7.14** The existing locomotives are already hybrids, since the diesel engine drives an electrical generator that provides power to the electric drive motors, which are mounted on the axles of the driving wheels of the locomotive. Retro-fitting these vehicles to run on alternate fuels or to be combined with some form of fuel cell or battery power technology would be extremely expensive, if not impossible. Fuel cells and/or hybrid diesel/battery technology is still in its infancy, particularly for heavy-power applications such as is required to run a train, and it is unlikely that the engineering issues associated with resolving these problems will be solved in the foreseeable future. Electrification is a service-proven technology for application in the railroad commuter industry and would not be subject to the typical prototype-proving issues that are inevitably associated with new technologies.

#### **2.7.15 Nick Kibre, May 13, 2004**

"It seems that trains of multiple unit cars provide a lot more flexibility than trains of non-powered cars powered by electric locomotives.

"This flexibility would put Caltrain in a much better position to offer improved service in the future esp[ecially] if funding increases:

- "shorter trains but more frequent
- "maintaining frequent service during off hours and weekends, adapting to lower passenger load with shorter trains instead of fewer trains.

"Basically two sides of the same coin."

**Response 2.7.15** Please see general response: Rolling Stock Planning.

#### **2.7.16 Hank Lawrence, April 12, 2004**

"Once the electrification is in place do you have any plans to introduce first class service cars like they do in Europe that would give people more leg room and have electrical plugs for laptop computers? I would definitely pay more money not to have bruised knees and a more comfortable seat that reclines a little."

**Response 2.7.16** Please see general response: Rolling Stock Planning. Under the Electrification Program's preferred EMU rolling stock option it would be possible for Caltrain to introduce a two-tier fare structure and create First Class and Economy Class seating arrangements. This could be considered when Caltrain develops specifications for the new rolling stock.

#### **2.7.17 Yevgeniy Lysyy, Sunnyvale Hearing Speaker, April 24, 2004**

"Another reason for Caltrain Electrification is to reduce...by 10 minutes...small locomotives instead of big one...6,000 horsepower. If there aren't special locomotives in U.S., buy from Russia. In Russia, locomotives are cheaper than passenger locomotives. In the case of Caltrain, electrification is just a waste of money. EMUs is a waste of money everywhere, but multiple unit...Rail car...small locomotives instead of big one. Such trains are several times more expensive and more maintenance and repair is expensive. They are faster but not twice as fast. In the city, we just bought EMUs...average speed is 32 mph, Caltrain is 28 mph. No big difference so what's the point."

**Response 2.7.17** See responses to Comments 2.7.5 and 2.7.8 for information on rolling stock.

#### **2.7.18 Darin McGrew, Release Engineering, April 6, 2004**

"How does the cost of electrification compare to other upgrades that would greatly enhance service?

- "separating Caltrain ROW from roads, eliminating crossings (safer, and increases maximum speed, but very expensive)
- "roll-on/roll-off access for wheelchair users (eliminating need for lifts and associated delays, reducing the extra time needed for a turnaround at the end of the line, and making life easier for everyone else, not just wheelchair users)

"Okay, so grade separation is probably too expensive to do all at once. It can be done a little at a time in cooperation with communities that want to eliminate whistle noise, or whatever.

"But while we're replacing equipment for electrification anyway, can we at least make sure the new equipment allows wheelchair users roll-on/roll-off access to the trains?"

**Response 2.7.18** Caltrain's Strategic Plan presents a process the JPB can use to compare the costs of various operating and capital investment strategies; this will help answer the question how electrification compares to other upgrades. For more information please see general responses:

### **2.7.19 Richard Mlynarik, May 24, 2004**

#### **“Consider system upgrade effects of an overall electrification ‘package’.**

“Caltrain should use electrification and introduction of new rolling stock as an opportunity to radically transform and upgrade the system, much as the Transperth urban rail system did in Perth, Australia, in the early 1990s, tripling ridership.

“Rather than just running the same service with the same operational problems behind a different locomotive (the ‘put some lipstick on that pig’ scenario), Caltrain should endeavor to use the very significant capital investment represented by any electrification program to attempt to address at least the following important issues:

- “Long station dwell times and low average speeds caused by the inefficient interface between station platforms and passenger rolling stock
- “Excessive schedule padding and poor time-keeping of Caltrain service due to ADA boarding and alighting
- “Excess weight and energy-inefficiency of FRA-compliant rolling stock
- “Extreme capital financial penalty of buying FRA-compliant rolling stock of non-standard design, which are produced only in artisanal, pre-industrialization numbers of units. Note that typical Asian or European rolling stock orders have costs around half of those borne by U.S. passenger operators, while the equipment offers are several decades more modern.
- “High operational cost penalty of over-staffing urban passenger trains in accordance with FRA-mandated, historical freight practices
- “Caltrain's poor equipment availability and high spares ratios. (It may be argued that these figures may not be substantially changed by CEMOF, should it ever be built, since after a certain number of decades these become are "cultural" as much as strictly mechanical problems.)

“The underwhelming cost-benefit of the program as reported in the draft DEIR reflects, perhaps quite accurately, a program too narrowly construed.”

#### **“Account for overall life-cycle costs and benefits of new rolling stock.**

“The overall life-cycle costs of different equipment options should be considered in light of the issues raised above. For example, if passenger vehicle fleet replacement combined with electrification is able to deliver barrier-free boarding and improved doorways, the service improvement to average trip times may be more from level boarding alone than from electrification alone; the greatest and cheapest improvements will result from not undertaking such programs separately.

“Similarly, combining an electrification program with a legislative and technical program to escape from or gain significant waivers from FRA regulation may save hundreds of millions of dollars in equipment costs and millions of dollars in annual operating costs.

“Equipment costs need to be much more accurately accounted for than they are in the DEIR, especially given that at least 73 of the existing gallery cars will reach the end of their economic life in the early 2010s. A year 2020 scenario in which electric locomotives are purported to be hauling the existing gallery car fleet is simply not realistic.

“Peer review should be undertaken to ensure that the ‘one for one replacement’ procurement studied throughout the DEIR does not result in Caltrain purchasing more equipment than is needed to provide anticipated levels of service. Proper life-cycle accounting of maintenance and capital costs, and examination of operations improvements which can improve utilization of expensive capital



equipment, may well result in revised rolling stock fleet sizes and lower initial capital costs for the program, or result in a different recommended equipment choice.”

**“DB, DBO, BOOT, etc.**

“Caltrain should consider design-build, design-build-operate, design-build-maintain and other ‘novel’ contracting arrangements for both infrastructure and, especially, for rolling stock.

“Not only might such arrangements result in lower life-cycle costs to Caltrain, but builders motivated by a need to keep maintenance costs under control for a contractual period of a decade or more may be able to deliver more reliable service using less equipment than is assumed in the “one for one replacement” scenario of this DEIR.

“Other systems have used the opportunity created by a change in rolling stock and a change in system image to make significant improvements in work practices and to move towards more principled economic trade-offs of capital and operating budgeting.

“Peer examples should be identified and studied.”

“Rolling stock options should include non-FRA alternatives.

“The project should consider packages of proposed rolling stock and regulatory changes which minimize capital costs and ongoing operational costs. It would be a huge mistake to write the EIR and subsequent RFPs to guarantee failure by requiring FRA-unique rolling stock and consequently locking out the world rail market and locking in 19th-century operating practices.

“A combination of a new and fail-safe signal system, interlocks which physically prevent non-PTC/ATS FRA equipment from entering the Caltrain line and prevent non-FRA Caltrain equipment from exiting it, and safe, lighter-weight, contemporary-design, energy-efficient, service-proven rolling stock may be hundreds of millions of dollars cheaper to own and operate and far safer for riders than the combination of old CTC signals, New Jersey Transit locomotives and Chicago passenger cars.

“It is possible to achieve superior levels of system safety by combining technology and appropriate regulation than by regulation alone. The wildly successful and widely imitated German ‘tram-train’ systems were introduced over the opposition of a regulatory agency nearly as irrational and intransigent as our FRA; the key will be to quantitatively and irrefutably demonstrate higher achievable safety levels as part of an overall rail system upgrade to international norms.

“A stated goal of the electrification is to ‘modernize Caltrain’; relief from very expensive and very historical Federal railroad regulations would be by far the cheapest and surest way to achieve this goal.”

“Specific comments on individual pages of the document:

- “S-1 section S.1: Nowhere here or anywhere else in the document are train performance advantages quantified. This is a striking omission.
- “S-3 section S.1: Bullet 4 assumes locomotives, not more general electrified rolling stock.
- “S-7 section S.2.2.5: Non-FRA rolling stock alternatives must be considered. By requiring that Caltrain rolling stock be built to one-off designs, at immense added cost and with dubious reliability, the proposed menu of rolling stock options guarantees failure for the Caltrain electrification program. One need look no further than the Amtrak Acela fiasco to see where FRA exceptionalism leads.
- “S-19 section S.4 table S-3: The year 2020 scenario (Opt. 3) is simply not realistic: 80% of Caltrain’s gallery car fleet will be more than 30 years old, and will have had to be replaced by this time.”
- “S-20 section S.8: Issues to resolve must include ‘waivers from FRA and PRESS rolling stock safety standards.’
- “2-37 section 2.3.2.5: Non-FRA rolling stock options must be considered.

- “Add an additional option: “Non-FRA Electric Multiple Units”, and note that while the vehicle would not have to be “specially procured and designed”, and while it would cost around half of what USA-specific equipment would, extensive negotiation with and lobbying of the FRA would be involved, almost certainly accompanied by installation of a more advanced (and expensive) signaling system.
- “2-46 table 2.3-3 and table 2.3-4: This table of rolling stock costs is nonsensical.

“There are many problems with this section. Firstly, one-for-one replacement of diesel-powered equipment is assumed, ignoring potential improvements in equipment availability through faster turns. See my general comments above about the need for feedback into the cost model from operational simulation, and also my comments on the August 2000 (my, how time flies, and to such little effect) “Draft Assessment of Electrically Powered Rolling Stock Equipment”.

“It also ignores the possibility that a better-maintained (possibly under a design-build-maintain contract) fleet of low age will have better availability than Caltrain's existing fleet. Certainly Caltrain's present-day 28 percent passenger car and locomotive spares ratios are numbers which would raise eyebrows at a well-run railway outside the USA.

“Secondly, it is still completely unclear what the “Other Existing Cars” category represents: as noted above of table 2.3-1, Caltrain owns 17 non-gallery Bombardier passenger cars as well as 14 old demotored Budd cars, but 19 of nothing. This level of imprecision throws the fleet requirement and rolling stock acquisition cost calculations into some doubt.

“Even worse than one-for-one replacement, the EMU option appears to replace 115 loco-hauled cars with 120 EMUs. The logic of doing so is very, very hard to understand. Comparison with other suburban operators suggests that a fleet of 75% to 80% of that size (e.g., 32x3 car, 24x4) should be more than adequate to provide that proposed level of service.

I also believe that the implied EMU unit prices are excessive, as I noted in comments on the August 2000 report on rolling stock.

“The estimated fleet size for the proposed levels of service should also be subject to review. From Table 2.3-8 on page 2-50 one deduces that the proposed 2008 level of service (98 trains/weekday) is more or less just the a circa-2001 Caltrain timetable of 80 trains/day supplemented by 18 express (“bullet”) trips, i.e., five more express round-trips per day than will be offered in June 2004. At most this should require 3 more trains than current operations, for a total of 19 or 20 trains peak demand: support of this amount of extra service should be well within the reserves of Caltrain's elephantine equipment spares ratio. It is unclear where the requirement for a total of 24 electric locomotives and 115 passenger trailers -- let alone 120 EMUs -- comes from.

“Repeating earlier remarks, the assumption that 93 gallery cars will still be in service in 2020 is unrealistic; by that time Option 1 (replace locomotives) and Option 3 (replace locomotives and passenger cars) will be identical. This shows the estimated capital costs of tables 2.3-3 and 2.3-6 to be **nearly completely meaningless** and embarrassingly shoddily developed.

“A proper accounting should consider the bulk of the gallery car fleet to be approximately 2/3 depreciated in 2008 and end of life long before 2020; and new rolling stock purchased for start of electrified service should likewise be depreciated over, say, a 25 year lifespan in order to create any sort of meaningful comparative table of capital costs for the different rolling stock options.

“This entire section, and the conclusions reached as a result of it, need to be completely reinvestigated and completely rewritten. It is economic nonsense.

- “2-47 table 2.3-5: This table should include separate San Francisco to Palo Alto and Palo Alto to San Jose phase costs.
- “2-48 table 2.3-6: Garbage in, garbage out: See my comments on the contents of the tables from which this table is derived.”

- “3-93 section 3.11.1.3: Non-FRA rolling stock, with significantly lower axle loadings, is likely to induce much lower levels of noise and vibration. In addition, noise mitigation is an active issue in rail vehicle design outside the USA (note in contrast that the FRA mandates minimum train noise levels in the Caltrain corridor.)

**Response 2.7.19 Electrification Package** – Caltrain’s 2004-2023 Draft Strategic Plan is the first step in completing the type of comprehensive analysis for implementing a large system upgrade package as called for in this comment. The Strategic Plan does this by outlining a future vision for Caltrain as well as the major projects that would be completed. The details of these projects would be planned in the context of the overall vision during the next several years based on market demand, funding availability, and policy objectives.

**Rolling Stock** – Please see responses to Comments 2.7.5 and 2.7.8 for more information on the rolling stock replacement program. The discussion of rolling stock options presented in the EA/EIR was meant to illustrate the major rolling stock options. The preferred option is to use EMU rolling stock. Should the JPB decide to pursue the Electrification Program, detailed specifications would be developed for the new EMU rolling stock that could include the recommendations presented in this comment (see general response: Rolling Stock Planning).

The rolling stock information presented in EA/EIR Section 2.3.3.1 (including referenced tables) has been revised to be consistent with Caltrain’s preferred option of purchasing EMUs in 2014-15.

The *revised* analysis assumes that 112 EMUs would be required to meet the *initial operating* schedule (114 trains per day), *increasing to a 160 EMU fleet by 2035 as shown in Table 2.3-2*. This estimate was based on replacing existing Caltrain passenger cars on a car-by-car basis, with allowance for increases in ridership and peak-period service. Together with rounding to six-car EMU consists, this approach results in a conservative capital budget for EMUs. This assumption will be reviewed during final design before purchase of any equipment.

**DB, DBO, BOOT, Etc.** – The question of how to implement electrification will be considered by the JPB as part of *its* decision on whether to move forward with the project. At that point several different options would be presented including design build, design build operate, and traditional project delivery options.

**Non Compliant Rolling Stock** – As discussed above (for example, see Responses 2.7.6 and 2.7.7), Caltrain does anticipate the use of non-FRA compliant rolling stock.

**Specific Comments** – The revised EA/EIR includes additional information on the train performance advantages of electrification including travel time savings (Section 3.15.5.1). Bullet 3 on Page S-3 has been re-written to not refer to locomotives. Table S-3, Electrification System Costs has been revised based on Caltrain’s preferred rolling stock option of purchasing EMUs in *FY 2014-15* to be consistent with existing fleet rehabilitation plans. The Electrification Program includes electrifying the entire line between San Francisco and *San Jose* (although electrification could be constructed in phases) rather than implementing a Minimum Operating Segment as outlined in this comment (see general response: Whether to Implement a Minimum Operating Segment of Electrification).

#### **2.7.20 Jack Perry, April 24, 2004**

“What is the difference in travel time between the electric locomotive and EMU train options?”

**Response 2.7.20** Table 3.15-6, which compares travel times for representative trips has been added to the EA/EIR. The table shows that EMUs would provide faster travel times than electrically-hauled Caltrain gallery cars. As expected, the improvement in travel time would be greater for all-stop service than for express service.

#### **2.7.21 Jack Perry, Sunnyvale Hearing Speaker, April 24, 2004**

“My question was what would be the difference in capital costs for rolling stock between the electric locomotive option and EMU train options? That was answered in the presentation.

"But, I would like to ask an additional question: What would be the difference in the travel time between the two options? Would be significant the EMU would be faster than locomotive trains?"

"Is there any difference in travel time between using the electric locomotive and EMUs?"

**Response 2.7.21** Please see response to comment 2.7.20.

**2.7.22 Walt Scrasen, April 22, 2004**

"FRA compliant equipment is generally heavier and more clumsy than European passenger equipment. I would think that you could have the separation between San Francisco/San Jose to use a more efficient type of passenger equipment. (This is between freight and passenger trains). So far as the operation between San Jose and Gilroy, you could then use FRA compliant equipment – very few cars and locomotives would be needed as compared to the entire fleet. Also, high-speed rail will need to use lightweight equipment in order to have their projected time between San Francisco and Los Angeles – that's a given."

**Response 2.7.22** Caltrain currently anticipates the use of non-FRA-compliant rolling stock for the reasons presented in responses to comments 2.7.6 and 2.7.7.

**2.7.23 Walt Scrasen, San Francisco Hearing Speaker, April 22, 2004**

"I just want to mention about FRA compliant equipment. It's usually heavy and clumsy. Most European equipment is much lighter, but doesn't comply with FRA. Why can't you set up to have time separation so far as freight operations, use more efficient type of equipment?"

**Response 2.7.23** See Responses 2.7.6 and 2.7.7.

**2.7.24 Thomas B. Stebinger, May 27, 2004**

"I'm enclosing copies of some pages on recent equipment being developed for the French National Railways (SNCF) that I found in a directory of French motive power that a friend brought me from Paris. I wish I had similar information from other countries, particularly Germany, as the technology you see is pretty much German. You probably know that the big German railway equipment manufacturing combine Adtranz was recently broken up and mostly sold to Bombardier, with the French electrification contractor Alstom buying the rest. This means the Bombardier now owns over half of German railroad manufacturing; only Siemens remains unaffected. This means that French and Canadian manufacturers now produce most German proprietary designs, and it's obvious that the French are taking advantage of this. The first of the four enclosed designs are for an improved design in which nearly all electrical equipment is housed in rooftop units. The remaining designs are both simple deck, which Caltrain wouldn't want, but I'm including them because they are interesting designs, with low floors. The First in all-electric, the second is a diesel electric which is also available as a straight electric when operating under wire. Who knows? Perhaps Bombardier would be able to modify its double deck designs to suit American conditions. I never see freight trains on Caltrain's peninsula segment, although I must agree that the Gilroy segment would carry freight, and collision with a freight train is a possibility there.

"I'm sorry to take up your time with these speculations, but anyhow, thanks again for sending me the EIR. It's excellent, and I'm happy to have it."

**Response 2.7.24** Equipment similar to the EMU cars depicted in the attachments provided by the comment contributor were assessed under the Preliminary Engineering rolling stock task, and details of both French and German EMU cars, among others, were included in a public presentation given on February 1, 2001 at JPB headquarters in San Carlos, CA.

**2.7.25 Martin Wasiak, May 24, 2004**

"I really like the look of European EMU's. Caltrain stainless steel look is very dated and rather unattractive, despite the pleasant interior. I would like to suggest that Caltrain strive hard to get

EMU's running for electrification, or if that's not financially possible, repaint all cars to a more modern look."

**Response 2.7.25** Comment noted.

**2.7.26 Brian Wilfley, CAC, Sunnyvale Hearing Speaker, April 24, 2004**

"I notice from the board, EMU alternative provides for significantly less vibration as opposed to the other two? I am curious why that is. Does that then cause the EMU to be a preferred alternative?"

"...Whether vibrations are in the technical definition of significant...? My intuition says in Atherton there is vibration. If there is a large vibration reduction and why that would be, I am curious why that is. Therefore, does that allow that one to be elevated?"

**Response 2.7.26** According to FTA Noise and Vibration Impact Assessment Guidelines, diesel and electric locomotive powered locomotives produce approximately the same vibration level during a passby. Self powered electric commuter trains such as EMUs would have a vibration impact similar to rapid transit vehicles which are 11 to 14 VdB less vibration than diesel/electric powered locomotives. This information is based on measurements that were conducted by FTA. The lower level of vibration by EMUs would be one of the JPB's considerations in identifying a preferred alternative.

**2.7.27 Francis Wong, San Carlos Hearing Speaker, May 1, 2004**

"...With regard to electrification overall, I would like to see more, make the case stronger for electrification as far as faster braking and faster acceleration. That seems to be a basic problem of physics, you have more horsepower per ton, you're going to accelerate faster, and deceleration is unfortunately a basic problem with the human anatomy, that can only take so much deceleration before the coffee spills out of your coffee cup or you experience physical discomfort, so if you can show kind of by comparison with the state of the art with diesel and gas turbine acceleration and deceleration rates, and why that can or cannot be achieved with electrified equipment. The replacement of equipment, I think you need to provide in those tables that the net costs are probably understated for a complete fleet replacement due to the current FTA content of our existing equipment, and the net savings that are factored into your total costs are probably not correct. Also, I suggest, that you look at availability of current electric locomotives that are not in service for pre-qualification of the catenary construction and also short-term life cycle costs. The acquisition of a small order of electric locomotives to replace our diesels, we would be the only carrier in that contract. By acquiring existing locomotives at a mere fraction of the cost, and we're talking orders of magnitude, you can get a gently used electric locomotive for \$20 to \$50 thousand plus some refurbishment cost against the \$2 to \$3 million for a new locomotive, and await a larger joint purchase contract with our other electrified properties, New Jersey Transit or Connecticut Department of Transportation—take advantage of the economic order quantities, patch on to those orders in the near term, and the life cycle costs for fleet replacement would be quite reduced."

**Response 2.7.27** From the customer's perspective, the benefit of electrification in terms of faster braking and acceleration is a reduction in travel times. Table 3.15-6, *Estimated Transit Travel Time for Selected Trips on Caltrain*, which compares travel times for representative trips, has been added to the EA/EIR.

The cost and funding of the different electrification rolling stock options has been revised in the EA/EIR (see Section 2.3.3.3, Operating and Maintenance Costs). The idea of purchasing used rolling stock would be considered as part of Caltrain's capital improvement programming, however, the operating benefits of obtaining a fleet of the same vehicles argues against purchasing small numbers of used vehicles from various different operators. Caltrain would work closely with other operators of electrified rail systems such as NJT to assess opportunities to make joint orders to reduce costs.

### **2.7.28 Francis Wong, May 14, 2004**

"Para 1.2.4, page 1-13. The declaration is made that electrification "speeding up acceleration and deceleration operations." Provide empirical elaboration on this claim. Such as: tables showing HP/ton required for certain acceleration or maximum speeds and comparisons of various rolling stock available in the preferred operating configurations. I.e., for a 500 seat train, five electric multiple units with total horsepower E, and hp/ton of  $E/(5 \times \text{EMU weight})$  compared to ALP-46 and five trailers with horsepower L, and hp/ton of  $L/(1 \times \text{engine weight} + 5 \times \text{car weight})$ .

"Para 2.32.5, page 2-37. Also table 2.3.3. Due to higher costs for limited production and sole development and extended delivery time of locomotives for only Caltrain (ALP-46 type or equivalent), analysis should be made to using existing electric locomotives, waiting to order ALP-46 or similar as part of joint order with New Jersey Transit, CDOT, MARC, SEPTA, or combination of those other agencies using a 25 Kv system. Available 25Kv locomotives that have equal or greater horsepower ratings than the proposed locomotives include five CF6 EMD-ASEA units recently surplus from BC Rail and 16 GE E60C units built for Mexico, 13 of which have never seen revenue service. Even after overhaul and conversion for passenger service, their nominal acquisition cost enables a significant savings over new locomotives (I estimate in excess of \$20 mil.) Life cycle costs might be increased due to using a 6 axle design, but there still is a significant savings of time and scarce capital funds. This also permits interim use of existing rolling stock and possible phased transition to EMU technology when costs of FRA compliant equipment can be shared again with the eastern agencies, on a quantity order."

**Response 2.7.28** Please see Response 2.7.27.

### **2.7.29 William Robinson, FP International, San Francisco Hearing Speaker, April 22, 2004**

"Issue of scaling your system, personally I prefer a mix with EMUs--lighter-weight vehicles and more of them. Addresses better frequency. If you scale the system power wise so you have a lot of tractions demanding power, so you don't have a brown out. Dropping voltages. FRA standards, in decade to do this, perhaps we can have a mandate to separate the timing of freight or elimination."

**Response 2.7.29** Please see Responses 2.7.5 and 2.7.7 for a discussion on EMUs, FRA standards, and freight timing. The analysis of electrical power generation presented in Section 3.10, Mineral and Energy Resources, of the EA/EIR forecasts that there would be sufficient future electrical facilities and power available to Caltrain to prevent brownouts or voltage drops.

## **3.0 CAPITAL COSTS / FINANCING PLAN**

### **3.1.1 California Transportation Commission, Bob Balgenorth, Chair, June 2, 2004**

"At its May 2004 meeting the California Transportation Commission, as a responsible agency, reviewed the Draft Environmental Impact Report/Environmental Assessment (EIR) for the Caltrain Electrification Program.

"According to the draft EIR, the Electrification Program alternative option I would be fully funded at \$602 million. The other options discussed under the Electrification Program alternative would require an additional \$29 to \$411 million to fully fund them. The Commission requests that the Joint Powers Board identify the specific funding sources(s) and the level of certainty that those revenues would be available to fund the other options should one of those options be selected as the preferred option.

"If you have questions, please call Robert Chung, CTC Deputy Director at 916-654-4245."

**Response 3.1.1** EA/EIR Section 2.3.3.2, Funding Sources and Programming, and Table 2.3-7, Funding Sources for Caltrain Electrification Program, have been revised to include a more detailed description of project funding. Sufficient funding has been identified to completely fund the Electrification Program.

**3.1.2 San Mateo County Transportation Authority CAC, Doris J. Maez, San Carlos Hearing speaker, May 1, 2004**

“...There’s a whole lot of differences [unintelligible] in terms of funding short falls. There’s a whole lot of differences and you should take care of them. Finally, the funding issue depends on reauthorization of Measure A and no where is that said “

**Response 3.1.2** Please see response 3.1.1. The \$108 million in Measure A funding was included in the original (1988) San Mateo County Measure A and does not depend upon reauthorization of Measure A.

**3.1.3 Metropolitan Transportation Commission, Bob Bates, Caltrain Liaison, May 25, 2004**

“Please specify the amount, if any, included in the capital cost for contingencies (Table 2.3-5).”

**Response 3.1.3** A 15-percent contingency was included on all capital costs. The text associated with Table 2.3-5, Electrification System Costs (Millions of 2008 Dollars) - Non-Rolling Stock Program Costs, has been amended to include the contingency in the list of “soft” costs.

**3.1.4 San Mateo County Transportation Authority CAC, Doris J. Maez, April 30, 2004**

**“Cost Benefit Ratio**

“Costs are a major concern. The increased ridership in 2020 due to electrification is 4,118 new riders, only a 7.6 percent increase for a capital investment of \$668M to \$1.0B and increased operating costs of \$1.6M to \$3.4M/year. This works out to \$146,187 to \$245,850 in capital costs per new passenger and \$388 to \$825/per yr/new passenger in operating costs. At \$8 per one way trip in six zones (the current fare), each of those new passengers could enjoy 18,273 to 30,731 “free” rides for the same cost as electrifying their ride.”

**Response 3.1.4** While increased ridership would be one benefit of electrifying the line, it is not the only benefit, nor is it a primary purpose of the Electrification Program. The JPB will consider the costs and benefits of electrification as well as other projects when it develops Caltrain’s Capital Improvement Plan (please see general responses: Caltrain Electrification Benefits, Electrification Cost/Benefit Analysis, Consistency of Electrification Program with Caltrain Strategic Plan, and Prioritization of Grade Separations and Electrification for more information).

**3.1.5 Santa Clara VTA, Roy Molseed, Sr., June 30, 2004**

“Pages 2-45 through 2-51: VTA supports the electrification of Caltrain. VTA Measure A of 2000 includes Caltrain electrification among the projects to be funded: “Provide VTA’s funds for the partnership with San Francisco and San Mateo counties to electrify Caltrain from San Francisco to Gilroy.” There are, however, several concerns regarding the funding, cost and timing of electrification:

- “An updated plan and schedule to fund electrification in the near-term will need to be devised. Revenue from VTA’s 30-year Measure A sales tax extension, which will provide VTA’s share of the electrification project, will not begin to be collected until April 1, 2006. The JPB, in cooperation with the member agencies, should examine the timing, funding and prioritization of electrification in the context of a financially constrained Caltrain capital improvement program, with particular attention to the availability of funds required for this project. The recent economic downturn has created shortfalls for many transit needs in the Bay Area and, at this time, it appears unlikely that actions at the State and Federal level will result in significant amounts of additional revenue for transportation projects. For these reasons, previous funding plans and schedules for electrification need to be revisited.
- “The funding plan in Table 2.3.3.2 should be revised to indicate that the VTA Board has allocated \$233 million for the project and that San Francisco Measure K of 2003 provides \$20.5 million of local sales tax towards their share of electrification.

- “The timing of the construction of electrification will have a significant impact on its cost. Caltrain’s Final Draft 2004-2033 Strategic Plan indicates “Estimates show that electrifying the railroad prior to construction of a grade separation can increase capital costs (of electrification and the grade separation) in the vicinity of the grade separation project by 65 percent.” This issue needs to be addressed in the EIR. The schedule for electrification of Caltrain should be coordinated with other JPB and third party projects to implement electrification in a cost effective manner.

“Page 2-45, Capital Costs: It is indicated that costs are net of the estimated revenue from the sale of surplus equipment, which is estimated at \$22 million. Net project cost would then be \$602 million, which means the gross project cost is \$624 million. Table 2.3-7 shows the gross cost at \$602 million, with \$22 million from the sale of surplus diesel locomotives included in the revenue pool of \$608 million. This would mean that the project cost, net of revenue from surplus locomotive sale, would be \$580 million (\$602 million minus \$22 million). It appears that the \$22 million is double counted.”

**Response 3.1.5** EA/EIR Section 2.3.3.2, Funding Sources and Programming, and Table 2.3-7, Funding Sources for Caltrain Electrification Program, have been revised to include a more detailed description of project funding.

The purpose of the Caltrain Electrification EA/EIR is to present the environmental impacts and benefits of electrification and outline the project’s costs and funding. The JPB will use this information in their regular capital improvement planning process to set priorities and implementation plans.

Please see general response: Prioritization of Grade Separations and Electrification for more information on the costs and benefits of electrifying Caltrain before completely grade separating the alignment.

**3.1.6 League of Women Voters of San Mateo County, Linda Craig, County Council Coordinator, Judy Orttung, Onnolee Trapp, Transportation Co-chairs, May 1, 2004**

“...The Caltrain Strategic Plan, page 30, states that electrification funds “will not be available until 2014.”

**“...Time Frame**

“This brings into question the tables that compare electrification system costs for 2008 and 2020, and the ability of Caltrain to complete the electrification program and increase the trains/weekday as projected in this EA/DEIR. While it may be a worthwhile exercise to look at this time period, the projections should be updated to the (probably) more realistic figures in the Caltrain Strategic Plan, where the Moderate Growth scenario projects electrification in 2018, with only 100 weekday trains.”

.California is in fiscal crisis. Electrification is high cost, high waste pork-barrel politics.

**Response 3.1.6** The Caltrain Strategic Plan was approved in July 2004. The EA/EIR has been *prepared* to agree with the Strategic Plan. The EA/EIR now assumes that the Electrification Program will be *in service* by 2015 and the appropriate analyses have been updated to agree with this date. Please see general response: Consistency of Electrification with the Caltrain Strategic Plan.

**3.1.7 Martin Engel, May 25, 2004**

“I oppose the plan to electrify the Caltrain commuter system. Here's why:

“...California is in fiscal crisis. Electrification is high cost, high waste pork-barrel politics.

**Response 3.1.7** Comment noted.

**3.1.8 Hamid Farzi, May 20, 2004**

“Let's make sure the facts are accurate, the public is properly informed of the costs...”



**Response 3.1.8** All anticipated capital and operating and maintenance costs are reported in the EA/EIR, Section 2.3.3, Costs, Funding and Feasibility. The cost for the project was developed through very careful studies. All capital costs also include an additional 15 percent for contingencies. EA/EIR Tables 2.3-3 through 2.3-9 provide an accurate picture of the project elements and parameters upon which the costs are based.

**3.1.9 Joan Holland, Sunnyvale Hearing Speaker, April 24, 2004**

"Can we get people in the community up and down the peninsula who are well to do to volunteer or donate. There are many good projects. This is one of them."

**Response 3.1.9** *Caltrain operates on the basis of fare capture and other supporting governmental funding. Donations do not constitute a component of Caltrain's funding program.*

**3.1.10 Jim Kelly, May 1, 2004**

"Emphasize that Caltrain electrification cost will be only half the cost of BART SFO extension."

**Response 3.1.10** According to the San Francisco Chronicle (History is Here -- New Link Creates Transit Hub, Link to Future, Sunday June 22, 2003), the cost of the BART San Francisco Airport Extension was roughly \$1.5 billion. *As shown in Table 2.3-6 of the EA/Final EIR, the cost of Caltrain electrification using EMUs is estimated to be approximately \$1,005 million for 114 trains per day service (in 2008 dollars).*

## **4.0 OPERATIONS AND MAINTENANCE COSTS**

### **4.1.1 Metropolitan Transportation Commission (MTC), Bob Bates, Caltrain Liaison, May 25, 2004**

"The MTC staff has reviewed the Caltrain Electrification Program Environmental Assessment/ Draft Environmental Impact Report (EA/DEIR) for the electrification of the Caltrain line from its northern boundary in San Francisco to its southern terminus in Gilroy.

"Our comments encompass the Project Description and Environmental Settings and Consequences chapters. Thank you for the opportunity to allow MTC to comment on the content of the environmental document for the proposed project.

"Please provide backup data to support the assertion in Section 2.3.3.3 that there would be operating cost savings for San Francisco Muni and SamTrans associated with the level of service for Caltrain under both the Electrification Program Alternative and No-Electrification Alternative."

"The operating cost for Base and Express service for 2008 is listed incorrectly in Table 2.3-9."

**Response 4.1.1** The statement in the draft EA/EIR attributing service reductions and cost savings to Muni and SamTrans as a result of electrification were incorrect; consequently, that text has been removed from the EA/Final EIR. Table 2.3-9, *Incremental Operating and Maintenance Costs for Electrification*, has been revised with *estimated costs prepared in Summer 2008*.

### **4.1.2 San Mateo County Transportation Authority CAC, Doris J. Maez, April 30, 2004**

"Since energy cost reduction is more than offset by increased maintenance costs associated with electric locomotives and EMUs, (p. 2-50, Section 2.33) the question is whether the improved air quality and noise reduction are sufficient to justify the costs of this project."

**Response 4.1.2** Comment noted. The JPB will weigh the costs and benefits of electrification as part of the process of deciding how to proceed. Please see general responses: Caltrain Electrification Benefits, and Electrification Cost/Benefit Analysis as well as Responses 2.2.11 and 4.1.7.

### **4.1.3 San Mateo County Transportation Authority CAC, Doris J. Maez, San Carlos Hearing speaker, May 1, 2004**

"...I'm concerned about the costs versus the benefits. It is a high cost; there's no doubt about that...There is increased O & M costs to maintain the overhead lines even though you have a reduction in energy cost that's more than overcome by the energy cost reduction. It will also take some signal system replacement; I was surprised to hear about that."

**Response 4.1.3** Please see response 4.1.2 and 4.1.7.

### **4.1.4 Santa Clara VTA, Roy Molseed, Sr., June 30, 2004**

"Page 2-49, Section 2.3.3.3: Operating and Maintenance Cost is based on an April 2001 Service Plan that was never approved by the JPB and is out of date. This information should be updated."

**Response 4.1.4** Operating cost data in the EA/Final EIR have been updated to reflect *more recent* Caltrain projections.

### **4.1.5 City of Sunnyvale, John Howe, Mayor, May 12, 2004**

"Operating and Maintenance Costs: These are described in Section 2.3.3.3 and Table 2.3-9. There is no description of which O&M costs were calculated. For example, are there anticipated net fuel

cost savings, and how do these compare to maintenance costs for 77 miles of a complex OCS system? The O&M costs of the Non-electrified Alternative shall be shown in the FEIR for comparison with the O&M costs of electrification alternatives.”

**Response 4.1.5** Table 2.3-9 in Section 2.3.3.3 of the EA/Final EIR has been added to provide this information. The table presents incremental operating and maintenance costs of electrification under *the EMU* rolling stock option for both the *initial operating* year and 2035.

**4.1.6 Yuriko Kishimoto, Palo Alto City Council, Sunnyvale Hearing Speaker, April 24, 2004**

“First question was impacts of the operating cost going up or down?”

**Response 4.1.6** Caltrain’s operating and maintenance costs will go up or down depending on the rolling stock option selected and the analysis year. Please see Table 2.3-9 in the EA/Final EIR for complete details and response 4.1.7 below.

**4.1.7 League of Women Voters of San Mateo County, Linda Craig, County Council Coordinator, Judy Orttung, Onnolee Trapp, Transportation Co-chairs, May 1, 2004**

**“Costs**

“...We are concerned about costs. Table 2.3-9, Caltrain Operating and Maintenance Costs with Electrification, provides costs for Basic and Express Service for 2008 and 2020, Incremental Cost of Electrification, and Total Operating and Maintenance Expense. Since Table 2.3-8 tabulates diesel for 2001 and ONLY Electric service for 2008 and 2020, we must conclude that Basic and Express in Table 2.3-9 are for Electric only. Therefore, we are unable to compare the O & M cost of diesel service to the cost of electric in this section. Furthermore, the first two items in the 2008 column do not add up to the Total O & M Expense figure, although the column for 2020 does total correctly. It would be helpful to again (in Table 2.3-9) have a column for 2001 diesel for comparison. These tables must be clarified.

“The energy use of diesel is compared to electrification in Table 3.10-1 for 2008 and 2020, but again, there is no cost comparison based on 2003 dollars. It may be difficult to project future costs of electricity and diesel fuel, but at the minimum, costs should be stated based on present rates in order to make a base line comparison of Operating and Maintenance costs. Based on energy consumption, energy costs should be overwhelmingly in favor of electrification. However, page 2-51 states that O & M costs are higher for electrification than for diesel due to cost of labor and materials for maintenance of the many additional components needed for Electrification. There should be separate columns in the table for [energy] and for [labor and materials] for both diesel and electric systems for 2008 and 2020 in order, to have an accurate comparison of No-Project and Electrification.”

**Response 4.1.7** Table 2.3-9 in Section 2.3.3.3 of the EA/Final EIR has been added to provide incremental operating and maintenance cost information for *the EMU* rolling stock option for both the years 2015 and 2035. This means that the table numbering in the EA/Final EIR has also been changed. *Figures for Table 2.3-10 have been recalculated in year 2008 dollars and using a horizon year of 2035. Since the Preferred Alternative has been identified by JPB, both tables only address operating and maintenance costs for Electrification using EMUs (Option 2). The table notes for both Tables 2.3-9 and 2.3-10 explain assumptions used and limitations associated with a direct comparison of operating and maintenance costs between the Electrification and No-Electrification alternatives. In reference to Table 2.3-9, with service levels at 114 electrically-hauled trains, using EMUs (Preferred Alternative) would cost about \$4.5 million more in 2015 compared with continued diesel operations. By 2035, with service levels also at 114 trains, using EMUs (Preferred Alternative) would still exceed annual O&M costs for diesel operations, but by a much lesser margin of about \$2.4 million. As noted in the comment, there is a definitive cost savings for electrification in terms of energy consumption. However, these savings only partially offset increased costs to maintain the electrification system. Updated and revised text contained in Subsection 2.3.3.3 of the EA/EIR provides further cost clarification in this regard. Please see general responses: Caltrain Electrification*

*Benefits and Electrification Cost/Benefit Analysis.* Also see Response 11.1.10 for additional information on energy savings, which shows that EMUs use about 95 percent of the energy equivalents of the other two rolling stock options.

**4.1.8 Richard Mylnarik, May 24, 2004**

"2-49 section 2.3.3.3: Absent any consideration of the operational advantages of the improved performance of electrically powered equipment, the tables of projected operating costs are of little use...other than as arguments against undertaking the electrification program.

"If faster turn times allow lower crewing costs, the slight extra operating cost of an electrified system show might instead turn into a small savings.

"If non-FRA equipment and practices are procured and implemented, One-Person Operation of trains will result in millions of dollars of annual costs.

"One-for-one replacement of diesel equipment results, unsurprisingly, in little more than one-for-one replication of existing cost structures, with the added burned of OCS maintenance."

**Response 4.1.8** For information on O&M costs please see response 4.1.7. See response 5.1.3 for information on revising crew requirements.

**4.1.9 Judith Orasanu, May 25, 2004**

"I OPPOSE the plan to electrify the Caltrain commuter system. Following are my reasons: California is in fiscal crisis. Electrification costs are high, both for the initial conversion, and especially for the operating and maintenance costs."

**Response 4.1.9** Please see response 4.1.7.

## 5.0 CALTRAIN SERVICE

### 5.1 AS AFFECTED BY ELECTRIFICATION

#### 5.1.1 Bay Rail Alliance, Margaret Okuzumi, May 25, 2004

- “We feel that it is important for the electrification program to acknowledge related benefits that could be made possible by the program. These include reduced dwell time at stations, intangibles such as a modern and attractive image, new and modernized equipment with amenities such as laptop outlets that appeal to commuters, greater reliability and operational benefits for increasingly frequent service.
- “Grade separations at 16th Street and Common Street in San Francisco. We are concerned that grade separations are required at these intersections to avoid disastrous interference from planned Muni trolley operations.”

**Response 5.1.1** Please see general response: Caltrain Electrification Benefits.

At present, there are no plans to install grade separations at 16th Street and Common Street in San Francisco, although grade separation of the entire line is a long-term Caltrain goal. Please also see response 2.3.1.

#### 5.1.2 Doug DeLong, Sunnyvale Hearing Speaker, April 24, 2004

“Well, Margaret kind of touched on one issue that I was interested in. She was talking about could Caltrain buy out the UP trackage rights on the existing JPB right-of-way to eliminate freight traffic. I’m thinking about it the other way. Keeping the freight traffic here which produces significant revenue for Caltrain right now and growing the public ownership of right-of-way...Bay Area in general...California high speed rail initiative, they seem to be saying that they are going to make their own sandbox and play in it and keep stuff they don’t want out. That seems like a fundamentally wrong way to do things. If you need extra tracks so that slow moving freight train moves through corridor while the passenger trains zips by at 200 miles per hour on another track, do that, and then you have redundancy to accommodate maintenance and other things, instead of having a system like BART that has only a minimum number of tracks. You can’t have express service, you can’t fix anything, and it’s an operational disaster.

“So my question really is, if we are going to electrify to Gilroy, and Monterey Transit wants to extend Caltrain to Salinas...? Also, does it make sense to explore possibility of growing public ownership of the right-of-way as far as Gilroy, Salinas? Does it make sense to explore public ownership towards Newark, Altamont Pass, and Oakland? This would have the benefit for UP of eliminating the maintenance expense if they didn’t have such a disastrous agreement with Caltrain. It might free up some capital and the capital would...public sources, trackage rights might preserve this monopoly access..., but things like Caltrain and Dumbarton Rail and capital would continue to grow many parts of the line. There are more passenger trains than freights trains...peninsula, Gilroy, but have those trains to Great America Stations, so you could serve corridor with Gilroy train.

“Of course, the issue of electrification, you cannot resolve in this environmental process. Your environmental document is programmatic, thing isn’t pinning down exact number of tracks...do you electrify all the way to Gilroy or stop at San Jose. This issue of rolling stock, what I like about Caltrain and JPB are they are doing it incrementally so you aren’t biting the elephant in one bite.”

**Response 5.1.2** If *JPB decides in the future to electrify Caltrain all the way to Gilroy, then Monterey Transit would still be able to operate diesel trains from Salinas along the Caltrain right-of-way.*

The question of public ownership of additional railroad *rights-of-way* in the Bay Area is important but well beyond the scope of this EA/EIR. *The Regional Rail Plan Final Report was adopted by MTC in*

September 2007. Examining public ownership is considered in the Regional Rail Plan. The Regional Rail Plan can be downloaded at: <http://www.mtc.ca.gov/planning/rail>. Please see general response: Minimum Operating Segment for more information on minimum operating segment.

### **5.1.3 Richard Mlynarik, May 24, 2004**

"The EIR needs to contain operational simulation information.

"Real information about train performance improvements should be used to explore significant operational benefits which are not addressed in the existing document. These data are simply not present in the DEIR.

"For example, section 3.15.5.1 on page 3-130 claims that "travel time savings onboard Caltrain would average about three percent on express trains and 12 percent on local trains." That is all. Surely more detail can and should be provided.

"But note that a 12% saving on the existing (padded) 96 minute San Francisco to San Jose local train schedule brings the journey to 85 minutes. This is within striking distance, especially when combined with boarding improvements made in conjunction with the introduction of new EMU rolling stock, and perhaps with some regulatory relief, of being able to make a round-trip in three hours with one train consist (and possibly one crew).

"A SF-SJ regular-interval schedule on half-hour headways can be operated with 25% less equipment—six trains and crews instead of eight—given a seemingly small decrease in train running time due to improved performance of electrified equipment.

"Such very significant ongoing operational savings should be accounted for, and the costs of rolling stock purchase should be decreased to account for better equipment utilization than in the one-for-one replacement scenarios assumed in the DEIR.

"I again note that the benefits of modernized and electrified Caltrain service need to be studied and accounted for as more of a synergistic program than the unnecessarily narrow electrification analysis in the DEIR."

### **"16th Street and Common Street grade crossings in San Francisco.**

"The DEIS is silent on the San Francisco Municipal Railway's plans to spend millions of public dollars to reroute the close-headway 30 and 45 trolley bus routes to cross the Caltrain line at grade, to the benefit of the Catellus corporation.

"Such a crossing of a high-voltage mainline railway overhead and low-voltage trolley bus wiring is almost unprecedented.

"The standard industry reference text, "Contact Lines for Electric Railways" by Kießling, Puschmann, and Schneider has only this to say, in over 800 pages of very detailed design information: "The only known level crossing between an electrified mainline railway and a trolley bus line is at Innsbruck [reference to a German technical paper published in 1989]."

"The railway line referenced is a "rarely-used freight-only" line providing access to one industry, quite in contrast to the frequent passenger rail traffic projected along the Caltrain line into downtown San Francisco.

"With headways of less than five minutes on both the trolley bus lines, and with similar bidirectional Caltrain headways at peak hours, it will be extraordinarily challenging to design a reliable system to permit this at-grade crossing.

"Muni and Caltrain have demonstrated repeatedly that technical innovation is not an organizational forte of either organization; I suggest that, here as elsewhere in matters of railway practice, Caltrain simply adopt tested solutions from elsewhere in the world.

"In this case, this means grade separation. Caltrain, working with the City and County of San Francisco, the Metropolitan Transportation Commission, Catellus, the San Francisco Municipal Railway, and most particularly with the Transbay Joint Powers Authority, should actively explore financing and engineering mechanisms such that either grade separation of the Caltrain line and these streets can be achieved, or that electrified Muni lines are no longer required to cross Caltrain at grade."

"Specific comments on individual pages of the document

**"S-8 section S.2.2.6:** A scenario of phased introduction should be considered, in which mixed diesel and electric operations coexist for some time. In particular, phasing of electrification first to Palo Alto with later extension to San Jose would require mixed fleet operation, but other scenarios are possible.

"Another example would have diesel locomotives hauling express trains, which require less acceleration performance, while the system's first delivered EMUs are assigned for local stopping trains. Such a scenario has a couple of possible advantages: it allows for early introduction of new electrified service before total fleet replacement is complete, it allows for stretching out of vehicle procurement costs, and it allows greater reuse of existing equipment.

"As it is unlikely that another commuter rail startup will be able absorb Caltrain's entire historical replica rail fleet at once, it seems more likely than not that Caltrain will continue to possess a (gradually-shrinking) inventory of diesel locomotives and unpowered Bombardier rail cars even after inception of electrified service. Fiscal prudence dictates that these be used unless there is compelling operating or maintenance reasons not to do so.

**"S-8 section S.2.2.7:** I suggest that any "new technology" crossing protection should be ERTMS compatible, as that is the clear technical direction of train-wayside communications world-wide.

"Consideration should also be paid to the use of axle detectors rather than older track circuits to drive crossing prediction timers. Note that axle counters are now standard for all train detection in many new installations.

**"S-9 section S.2.2.9:** As noted above, phasing should be optionally be San Francisco to Palo Alto followed by completion to San Jose.

"Electrification to Gilroy does not make any operational or economic sense under any projected scenario and must be rejected before its costs drag the entire rest of the system down."

**2-43 section 2.3.2.7** See comments on page S-8 re constant time crossing predictors.

Note also that a cab signal system incorporating automatic train stop may be a desirable next step to undertake, especially in order to obtain relief from FRA structural "safety" regulations.

**2-44 section 2.3.2.8:** It is certainly the hoped that planning will be undertaken for "third and fourth track improvements" beyond those already constructed.

**Response 5.1.3** *Detailed train operation simulations are not normally needed for purposes of the EIR. Simulations are useful in examining arrival and departure times, perhaps also in the context of arrivals and departures of connecting local transit routes, but for purposes of determining environmental impacts, they are not particularly useful. Section 3.15 of the EA/EIR includes information associated with train operations, such as station boardings and alightings, that are used in other analyses, such as parking, energy calculations, noise impact analysis, etc.*

**16<sup>th</sup> Street Grade Separation** – Please see responses 2.3.1 and 5.5.1.

**Phased Operation** – Please see general response: Whether to Implement a Minimum Operating Segment of Electrification.

**Vehicle Option** – The idea of gradually replacing existing Caltrain rolling stock with electrified equipment will be considered by the JPB as it decides how to implement electrification, however the EA/EIR analyzes the project upon completion, in other words, with the full electric fleet. Exactly what

schedule Caltrain follows on this path would be determined based on funding availability, service impacts, and environmental benefits.

**Crossing Protection** – ERTMS and axle counters will be among the technologies considered in assessing grade crossing protection systems for the project.

**Additional Tracks** – Caltrain is in the process of planning additional capacity improvements (including additional tracks) as part of other projects.

#### **5.1.4 Thomas B. Stebinger, May 27, 2004**

“Thank you very much for the Environmental Assessment/Draft Environmental Impact Report on the Caltrain Electrification Program. I’ve looked through it, and must say that it is an excellent, very professional job, and hope that, eventually, the work will be carried out as recommended. It will be very much needed if Caltrain’s underground extension to a downtown San Francisco terminal is ever carried out, and even more needed if California ever gets started on its High Speed Railroad program.

“I’d also like to see the entire Caltrain right-of-way fully enclosed by wall or fence, and all grade crossings eliminated, between San Francisco and San Jose (the town-by-town approach followed by San Carlos and Belmont is pitifully inadequate and expensive); push-pull operation eliminated in favor of multiple unit; and all gallery coached replaced by true double decks with low floor loading, “Baby Bullets” aren’t enough; we won’t get true rapid transit performance until we can accelerate all trains, including local trains that make all stops. That’s a tall order, I know, but must be pursued in some form if we are to get the full advantage of electrification.”

**Response 5.1.4** Please see the general responses: Rolling Stock Planning and Prioritization of Grade Separations and Electrification.

## **5.2 CALTRAIN SERVICE GENERALLY**

### **5.2.1 John Bacon, San Carlos Hearing Speaker, May 1, 2004**

“...If you are anxious to improve service, especially on local trains in the middle of the day, you have less than 200 people and you have capacity for 600 people. Just cut two cars and you can speed up service by about the same amount as electrification. Pulling 5-car trains—and there was a consultant that came in here and showed— you save 4 minutes on the route for each car you knock off the trains, that would speed up the service. Just run shorter trains. Another issue is your long-range projections in the environmental document for the Transbay Terminal, you tend to increase the number of trains faster than the number of people who ride the trains. It’s a good idea to increase service, but it looks like you would be well-served to run no more than 5-car trains. Level boarding will double the speed of boarding instead of stairs. This is industry standard to speed up boarding. Uncertainty of wheelchair people. With the bullet trains, you need to time the trains to meet each other and this is not effective for wheelchairs.”

**Response 5.2.1** One of the benefits of electrification is that it enables Caltrain to run longer consists without degrading train speeds. This enhances productivity for meeting peak-period demand with fewer, longer trains, which require fewer staff and therefore have lower costs to operate than more frequent, shorter trains. More frequent service would also require a new signal system, which would have high capital costs exceeding those of electrification.

While it is true that shorter trains pulled by diesel locomotives could have similar travel times than longer trains under electrification options, for trains of equal passenger capacity and stopping patterns, electric propulsion reduces travel time. The idea of running shorter trains during the midday since there is less passenger demand is a good one that is used by many heavy rail (subway) systems. Given Caltrain’s existing equipment this is difficult to do because it requires splitting and reforming trains between peak period and midday service. Often this splitting and reforming



operation adds more to operating cost than it costs to operate longer trains. New rolling stock, such as EMUs could address this issue by providing more efficient ways to split and reform trains for midday service.

As stated in the comment, level boarding *would* help speed up service. Level boarding is a key issue that will be considered in the context of Caltrain's long range capital planning. Any of the electrification rolling stock options can be configured to allow level boarding.

### **5.2.2 Bob Figoni, May 1, 2004**

"A link over the Dumbarton RR Bridge should be included in Phase II.

"...More cities should be included for the express trains. No stops between Palo Alto and Hillsdale. Doesn't make any sense!

"Must have train/station level entry level."

**Response 5.2.2** The Dumbarton Rail Project is not related to the Caltrain Electrification Project. Please refer to Caltrain website, or contact the Caltrain Public Information Officer for more information on the Dumbarton Rail Project and other non-electrification issues.

Regarding including more cities in the express route, fewer station stops along the express route produces shorter trip times. If more stations are included along the express runs, the trip time would increase and the trains would no longer be "express." In the current situation, for example, local trains cover the San Jose to San Francisco link in about 1 hour and 35 minutes, while express trains cover that distance in 57 to 58 minutes. Local and limited stop service is designed to include more stops than express.

Regarding level boarding, please see response to comment 5.2.1 and general response: Rolling Stock Planning.

### **5.2.3 Ernie Hills, San Carlos Hearing Speaker, May 1, 2004**

"What I'm concerned with is that we have to have a uniform policy for the areas of our service, and not tailor-made for every little [unintelligible] for people in certain areas. A good example: in Redwood City, they have had a policy that they want to control the speed of trains going through that town, and while I can understand that for some of the people that are close to that track, it would be a concern, that this has to be a single system from San Francisco to Gilroy, possibly in the future from Salinas to Monterey—we don't know where it's going to end up—but it has to be one system and we have to be united and not tailor-made our policy to everyone who bitches about some minor thing."

**Response 5.2.3** According to the recently adopted Caltrain Strategic Plan, Caltrain's vision is to become the preferred mode of travel along the Peninsula Corridor by providing passengers with a world-class travel experience; acting as a major catalyst for redevelopment and economic activity in communities along its route; and playing a key role in mobility management along the Peninsula Corridor and in the Bay Area region as a whole. There is no requirement that local service policies be uniform to achieve this vision.

### **5.2.4 Joan Holland, Sunnyvale Hearing Speaker, April 24, 2004**

"I was just curious about Caltrain Electrification Program in ticket sales. Who gives Caltrain money to run from day to day, the city, the county, the state, federal? Extra funding."

**Response 5.2.4** *In 2007, the sources of operating funds for Caltrain were as follows: 48 percent came from fare box and other miscellaneous revenue. The majority of the remainder of the operating revenue is funded from local taxes by the counties of San Francisco, San Mateo, and Santa Clara.*

### **5.2.5 Stan Hutchings, April 21, 2004**

"I also ask the Palo Alto City Council to forward, or include these comments in the Council's letter to the Valley Transportation Authority (VTA) to join other North County cities in asking the VTA Board and staff to re-examine the transit and Measure A priorities for the next 25 years.

"The times Caltrain would be most useful to me is when I'm going to depart to or return from either San Francisco or San Jose airports. I would like to take a scheduled Caltrain and not have to worry about traffic, arranging a ride with a friend, hiring a taxi or shuttle, or parking if I drove myself. There are two major problems, however."

- "First, the baggage transfer.
- "Second, the schedule frequency.

"You probably don't have to read the following explanation, you know exactly what I mean.

"The train is extremely inconvenient for carrying luggage. The high steps to get on the train, the lack of convenient storage space, and the difficulty of disembarking with luggage are all severe problems. Once at the train/airport connection, it's easy and free to get to the airport even with luggage, a great attraction considering the cost of gas and airport parking. Getting to the connection with luggage is the big problem. Since I'd like to go to the airport, usually for an extended trip, I need luggage: suitcase, carryon, handbag/backpack. You need to come up with an efficient, attractive solution. One possibility would be a luggage service to collect and deliver luggage (perhaps in coordination with the airlines); security problems would have to be addressed. One possibility would be a special 'airport connection' car, with easy access and storage, which stops as close as possible to the airport connection (perhaps taxi companies could be induced to have a cab or two at the station at scheduled arrival times, too). There are probably other solutions. The point is, my wife and I (and probably thousands of other travelers around the Bay Area) cannot use the train to go to and from the airports without better luggage handling.

"The airlines require you to be at the airport 2-3 hours in advance. This can cause some time wasted getting to the airport too early, or stress if a later train is taken. Trains at a 20-minute interval would be most convenient; trains at a 60-minute or more interval is just too much. The return trip home is of even more concern, since just missing a train could involve a very long wait in the cold. Personally, I'd much prefer more frequent trains to faster trains (i.e., baby bullets)."

**Response 5.2.5** Caltrain has two main objectives in terms of service improvement: increasing express service and expanding the limits of half-hourly service; both of these objectives will provide increased frequency for trains to the airports. Baggage handling is a complicated issue for Caltrain to address given airport security concerns, however, if demand warrants it may be possible to incorporate some type of baggage handling as part of the high speed rail planning. A major objective of the proposed high speed rail system is reducing airport congestion, so it may be possible to organize a baggage transfer program as part of that project. These issues are beyond the scope of the Electrification Program but are addressed as part of Caltrain service planning. Also see general response: Rolling Stock Planning for information on level boarding.

### **5.2.6 Hank Lawrence, April 12, 2004**

"Are there plans to put in a second set of railroad tracks to Gilroy? Is so, when?

"Are you going to provide morning commute service from San Jose to Gilroy and are you going to provide evening commute service from Gilroy to San Jose?

"Will there be Baby Bullet service from San Jose to Gilroy in the mornings and from Gilroy to San Jose in the evenings?

"Will there be weekend service to Gilroy. I would like to shop at the outlets. I just don't like driving that far.

"Are there planned schedule alignments with Amtrak?"

**Response 5.2.6** The Union Pacific Railroad (UPRR) owns the tracks between San Jose and Gilroy. Caltrain would need to negotiate with the UPRR for permission to operate more trains on this line than the current *three* daily round trips. Since most of the line is currently single tracked and since it is heavily used for freight trains it would be necessary to construct additional tracks on the line to provide more service. The decision on whether to add more service will depend on market demand, funding (operating and capital), policy objectives, and negotiations with the UPRR.

We are unaware of any schedule alignments with Amtrak.

**5.2.7 Hank Lawrence, San Carlos Hearing Speaker, May 1, 2004**

“One of the things that kind of bothers me is that right now you only have one track going to Gilroy. I live in Menlo Park and it would be kind of nice to the people that do live in Gilroy down there to be able to have service going both ways in the morning and evening, so I don’t know what has to be done with the Union Pacific Railroad, or whatever railroad runs that, but it’s real important to get two rails down there.

The other thing is that if you want to go into downtown San Francisco and the Transbay, the only way to do it is through electrification, you can’t have people, you can’t switch mode of locomotive for the last mile, you’ve got to have electrification, BART did two things really right—they did a lot of things wrong: they had non-standard gauge rail and they had an antiquated control system—but they two things that really impressed me: one is they did the third rail, they had grade separation all the way, which made it possible to do that, and the other thing they did is that all the platforms were level with the entrance to the cars, those are the two features I really like. But believe me, I think it’s really important to get that third rail, but in order to do that we have to get grade separations all the way through there. It’s really important that we do that, but in the meantime, just use diesel, until we get complete, 100% grade separation and go with the third rail solution, it will be a wonderful thing to have.

The bullet trains are great, and I would like to see the bullet trains go down, after you get the second track, to have the bullet trains going down all the way to Gilroy, on a daily basis. I kind of like to travel to the outlets. I don’t like driving 45 minutes in my car. If I could get on the bullet train and maybe stop in Mountain View and Tamien [unintelligible] I could get there in less time.”

**Response 5.2.7** See response to Comment 5.2.6 for information on service to Gilroy.

See general response: Prioritization of Grade Separations and Electrification for information on grade separation and general response: OCS and Third Rail Power Distribution Systems for information on third rail electrification.

**5.2.8 Yevgeniy Lysyy, Sunnyvale Hearing Speaker, April 24, 2004**

“In my opinion, do something useful. Drop this project. Let’s do something useful. For instance, Caltrain must run every 15 minutes like BART trains do. Short trains every 15 minutes instead of half hour...no regular trains...light rail...San Jose to Cupertino...”

**Response 5.2.8** Shorter and more frequent trains would not meet the demand of Caltrain’s identified travel markets. More frequent trains would also require additional staff to operate and would necessitate a new signal system with high capital costs exceeding those of electrification. Electrification would enable Caltrain to add cars to peak-period trains without degrading speeds; this is a much more efficient and cost-effective mode of operation than more frequent, shorter trains. The distances served by Caltrain are too great for the 55 mph maximum speeds of light rail trains.

### **5.2.9 Rosemary Maulbetsch, San Carlos Hearing Speaker, May 1, 2004**

“...I’d be interested in knowing what hard data suggests the need for increase in the number of trains.”

**Response 5.2.9** Caltrain service is planned to increase for three reasons: 1) to meet increased future demand, 2) to provide better peak-period service, especially more express or Baby Bullet trains, and 3) to improve service in the off-peak and evening, particularly when there are long gaps between trains. In comparison to 2007 ridership, by 2035 ridership is projected to increase 112 percent (Table 3.15-5). In contrast, train numbers are planned to increase 16 percent from 98 to 114 trains. *Future service needs are determined by travel demand modeling that evaluates applicable future conditions, such as changing demographics, increased population and employment, freeway congestion, cost of fuel, etc. The regional travel demand model was used to project the level of service needed to be provided by Caltrain in 2035. Also contributing to increased demand is the current reality that a shift from automobile to public transit usage is occurring in response to the high price of gasoline.* Thus, the planned service increase is warranted by projected ridership alone.

### **5.2.10 Vina Stallman, April 24, 2004**

“Foreclose on SCC ROW.

“Terminate service at Menlo Park until SCC pays up.”

**Response 5.2.10** Comments noted.

### **5.2.11 Speaker unknown, Sunnyvale Hearing Meeting, April 24, 2004**

“Will electrification change or extend hours of train operation? Is this included in the project?”

**Response 5.2.11** Electrification alone will not cause a change in Caltrain’s hours of operation or schedule—although there could be some short-term interruptions of service during construction, as described in EA/EIR Section 4.1. According to its Strategic Plan, however, Caltrain does plan to increase service during the coming years consistent with market demand, funding, and public policy.

### **5.3 GRADE SEPARATING CALTRAIN SERVICE FROM CROSS TRAFFIC ON LOCAL ROADWAYS**

#### **5.3.1 City of Menlo Park, Kent Steffens, Director of Public Works**

“...On page 2-53, the DEIR opines that grade separating the entire system would delay electrification for several years. It also states that grade separating the entire line would increase costs with no commensurate improvement in train service. This particular assertion appears unfounded given that a fully grade separated system is an adopted goal of the JPB. We question this conclusion of the DEIR given the substantial history of grade crossing accidents on the line that grade separations would avert, given the serious disruption to system reliability that results when a rail accident occurs at a grade crossing and given that the claimed noise-reduction benefits of the electrification program generally will not be truly realized until and unless completion of grade separations eliminates the most disturbing noises created by train horns and wayside warning devices. Contrary to the statement of the DEIR, grade separations are obviously not just a benefit-less cost to the rail system. From the perspective of a community that is substantially benefited by Caltrain service but significantly adversely impacted by certain aspects of Caltrain operations that relate to a lack of grade separations (the train horn noise, congestion and safety at the grade crossings) a fair argument can be made that what the JPB should be doing is using first available funding to grade-separate the entire system and using later funding to do the electrification, in which case: 1) the claimed noise-reduction benefits would be realized because the train horn noise would be eliminated and 2) the electric third rail system that avoids all the overhead equipment many people may consider unsightly may prove most practical.

“If electrification precedes complete grade separation of the Caltrain line, during any subsequent grade separation project, the electrification gear will need to be moved over to the shoofly and back again to the permanent tracks, an activity that obviously adds complexity, cost and time to any grade separation project. Less obvious but nonetheless significant, aside from moving the electrical system twice, just having to work near the hot wires while doing the ordinary grade separation construction activity will add complexity, time and cost and may also necessitate more intrusive and disruptive temporary construction easements. These are significant considerations for communities that are prospective candidates for grade separations.”

**Response 5.3.1** Please see general response: Prioritization of Grade Separation and Electrification. As the comment notes, grade separating the Caltrain line will provide Caltrain and the Peninsula with numerous added benefits including improved safety, noise reduction, and operating improvements. The text in *Section 2.4.4* of the EA/Final EIR has been modified to more accurately reflect the benefits of grade separating the line, in keeping with Caltrain's goals. The noise reduction benefits of electrification reported in the EA/EIR (*between San Francisco and San Jose*) would be realized without grade separating the Caltrain alignment. Additional noise reduction benefits would be realized from grade separations since trains would no longer need to sound their whistles, as they must at grade crossings.

Also please see the general responses: Electrification and High Speed Rail (HSR), and OCS and Third Rail Power Distribution Systems.

#### **5.3.2 City of Mountain View, Matt Pear, Mayor, May 18, 2004**

“On behalf of the Mountain View City Council, I am writing to provide the following comments on the draft Environmental Impact Report (EIR) for the proposed Caltrain electrification project. These comments address the EIR and do not constitute a position on the project or its importance in context to other planned projects along the Caltrain line.

“Grade Separations

"Mountain View and other communities along the Caltrain corridor are in the process of planning grade-separated crossings which provide improved railroad and vehicle roadway safety, decreased traffic congestion, and increased efficiency of the railroad and roadway. Construction of the grade separations after electrification will result in a significant loss in the Peninsula Corridor Joint Powers Board (PCJPB) investment in this project as large portions of the overhead contact system will need to be removed and reconstructed as grade separations are built. This also has the secondary effect of increasing the cost of grade separation projects. Considering the importance of grade separations and the cost implications of building an electrified system before these projects are complete, the EIR should include a discussion of this issue, and the PCJPB should consider the importance of grade separations and other critical system improvements when establishing project priorities."

"...Thank you for providing us with the opportunity to comment on this document, and we sincerely hope you will address these issues in the final EIR. If you or any of your staff have questions, please feel free to contact Peter Skinner, Senior Administrative Analyst, at (650) 903-6311."

**Response 5.3.2** Please see the general responses: Electrification and High Speed Rail (HSR), and Prioritization of Grade Separations and Electrification. As recommended in the comment, Caltrain's governing board, the JPB, will consider the importance of grade separations and other critical system improvements when establishing project priorities. Electrification designs will be closely coordinated with *the* design of *future* grade separation *projects*.

### **5.3.3 Bay Rail Alliance, Margaret Okuzumi, May 25, 2004**

"Grade separations. A common question that has come up is whether electrification will increase the cost of future grade separations. We believe that most of the costs of electrification are due to the substations and equipment, rather than the actual wiring at grade crossings. We don't think that electrification will add significantly to the cost of future grade separations, but please address this issue in the EIR."

**Response 5.3.3** The cost of the electrification elements at grade separations could be considerably increased if the Caltrain line is electrified before the grade separation projects are completed. The increase in cost depends on the exact design of each grade separation project and whether there is a need for temporary (throw-away) wiring of a shoo-fly alignment or if the new structure can be built with only limited impact on the existing electrification facilities. The design of the grade separation *projects* will be closely coordinated with designs for the Caltrain Electrification program. Approval of the Electrification environmental document is needed to enable JPB to commit capital funds to integrate the electrification and grade-separation designs. Text has been added to the EA/Final EIR in Section 2.3.3.1 to address this issue. Please also see general response: Prioritization of Grade Separations and Electrification.

### **5.3.4 San Mateo County Transportation Authority CAC, Doris J. Maez, San Carlos Hearing speaker, May 1, 2004**

"...Yes, there's some noise reduction, but the major impact of noise is really the train bells and the lack of grade separations drives that; you don't need to have them in every segment, but in heavily traveled sectors you do, there's also a safety factor. If high-speed rail is in our future we need to look at that grade sep issue now, not down the line."

**Response 5.3.4** Please see general responses: Prioritization of Grade Separations and Electrification and Electrification and High Speed Rail.

### **5.3.5 Union Pacific Railroad, Tom Ogee, Chief Engineer–Design, May 25, 2004**

"...The signal system and crossing warning systems shall be designed and installed to continue to support Union Pacific Railroad train operations."

"Replacement of crossing warning equipment shall be approved by regulating state and local authorities, where required."

"Replacement, modification, installation, operation and maintenance costs of signal and crossing system facilities required for UPRR train service operations shall be included in scope of project costs

"Installation, operation, and maintenance of signal and crossing system facilities should be reviewed and approved by Union Pacific Railroad prior to implementation."

**Response 5.3.5** Comment noted. Caltrain will work closely with the UPRR on design, installation, and operation of signal system and crossing warning systems *within the San Francisco-San Jose corridor* to ensure that these systems are in compliance with FRA (Federal Railroad Administration) and CPUC (California Public Utilities Commission) requirements. UPRR's review capacity is contained in the Joint Facility Agreement.

**5.3.6 League of Women Voters of San Mateo County, Linda Craig, County Council Coordinator, Judy Orttung, Onnolee Trapp, Transportation Co-chairs, May 1, 2004**

"Has there been a study of use of diesel locomotives on a completely separated Right of Way (cross streets either grade separated or completely blocked) to determine how much faster service would result because of eliminating speed restricted zones? If high-speed rail is a realistic major planning consideration for future operations, there should be consideration of Right of Way separation as a first step, with Electrification to follow when high-speed rail requirements are better known and could provide funding for many of the needed Non-Rolling Stock improvements. If end-to-end train times could be significantly improved by separation beyond the insignificant 8 minutes (Table 3.15-6) expected, the train would be more likely to attract new riders, with either diesel or electric service."

**Response 5.3.6** Please see general response: Prioritization of Grade Separations and Electrification.

In response to the question of diesel trains and grade separations, grade crossings themselves do not reduce train speeds and therefore diesel trains operating on a right of way with no grade crossings would not necessarily be faster than trains operating on the same line with grade crossings. The present signaling system associated with the grade crossings limits train speeds to 79 mph, but can be enhanced to 90 mph. To achieve speeds greater than 90 mph, Caltrain would have to introduce much more complex grade crossing warning systems that would involve greater highway vehicle delays. The key to reduced travel times under electrification is that electric trains have better acceleration and deceleration than diesel trains; this is especially important for corridors like the Peninsula, which have many closely-spaced stations. Reductions of from *one to eight* minutes per trip are possible, as reported in the EA/Final EIR, Section 3.15.

**5.3.7 Patti Frazier, May 25, 2004**

"I object to the raising of the tracks."

**Response 5.3.7** See response to Comment 5.3.3. Tracks would not be raised as part of the Caltrain Electrification Program described in the EA/DEIR. Caltrain tracks may be raised as part of other projects designed to grade separate tracks from cross roadways (although the roadways could be lowered instead). *Future grade separation project designs* would be closely coordinated with the design of the Overhead Contact System for the Caltrain Electrification Program. Grade separations that eliminate an existing railroad grade crossing are exempt from the California Environmental Quality Act.

**5.3.8 Terry Gammon, April 27, 2004**

"Caltrain Electrification is a good idea, but the tracks need to be elevated to separate the whole system from cars."

**Response 5.3.8** Please see general response: Prioritization of Grade Separations and Electrification.

### **5.3.9 Charles Guenze, Sunnyvale Hearing Speaker, April 24, 2004**

"In the preparatory remarks, mentioned other improvements that have been planned or contemplated, increasing grade separation and increasing the number of tracks, and there is long range possibility of high speed rail. Is there an attempt to coordinate the electrification program with these other very construction-intensive projects to both minimize the cost of project as well as the environmental problems of extended construction impacts?"

**Response 5.3.9** Caltrain's governing board has mandated that staff coordinate electrification with other major construction projects on the *right-of-way*. Please see the general responses: Electrification and High Speed Rail, and Prioritization of Grade Separations and Electrification. Also see response to Comment 5.3.3.

### **5.3.10 Russ Peterson, May 25, 2004**

"...besides the initial environmental impact it appears that little consideration was made to completing electrification AFTER, or at least in conjunction with, grade separation. This impact, completing electrification twice, seems unnecessary and wasteful of physical, environmental and financial resources."

**Response 5.3.10** Please see the general response: Prioritization of Grade Separations and Electrification. Caltrain's governing board will give careful consideration to the timing of electrification with respect to other improvements.

### **5.3.11 Keith Virnoche, May 13, 2004**

"I concur with the conclusions reached in the subject report and favor electrification.

"I would however ask that the Caltrain adopt an objective of running trains underground as the primary objective in all future grade change considerations.

"It seems to me that the focus of grade change is currently on how far above grade the trains will run or how far below grade a road must be built to accommodate grade separation.

"I would like to see Caltrain construct all future grade separations by relocating trains underground and allowing road crossing to run at grade level. This would reduce all noise impact and provide a significant amount of new usable space for residential and retail development. I think that Caltrain could make enough money through the sale or leasing of the land and air space above ground to pay for such projects.

"I'm interested to know if this has taken place anywhere in the system.

"What is Caltrain's position on underground relocation of trains at road crossings?

"Has this taken place anywhere in the system and if so why isn't it done everywhere?

"If this has never been done then I'm interested to understand why not?"

**Response 5.3.11** Please see the general response: Prioritization of Grade Separations and Electrification. As outlined in the general response, the Caltrain Electrification Program does not include grade separation, although electrification would be carefully coordinated with any grade separation projects that are being designed or planned at the same time, if electrification goes forward.

The question of how to complete specific grade separation projects must be answered by completing a detailed analysis of the particular conditions in each project area. In some cases, the geometry of the railroad tracks or roadway systems requires that the railroad tracks be elevated or that the roadway be depressed. As a rule, however, constructing an underground alignment for a railroad is extremely expensive. For example, the 8.2-mile BART San Francisco Airport Extension cost almost \$1.5 billion. Constructing a fully underground four-track railroad with stations from San Jose to San Francisco would likely be prohibitively expensive.



### **5.3.12 William Robinson, FP International, San Francisco Hearing Speaker, April 22, 2004**

"I represent the mid-peninsula. Two or three things. I appreciate seeing pride in grade separations in Holly Street and San Carlos crossings. As contrast, I'm just 200 yards from grade crossing at Charleston Road in Palo Alto and shared by several schools. Biggest obstacle to our idealized plan is the money and timing this will take and more money and timing for grade separations where you want higher frequency and higher speed and you want safety. Keep those things in mind."

**Response 5.3.12** Comment noted. Please see the general response: Prioritization of Grade Separations and Electrification.

## **5.4 DUMBARTON RAIL SERVICE**

### **5.4.1 Hamid Farzi, May 20, 2004**

"I suspect that the overall figures for the ridership of the Caltrain system is grossly overestimated, whereas the budget of these projects are obviously grossly underestimated. We best do a double check of these studies before we spend all that hard earned money. This comment applies specifically to the suggestion of a 'Dumbarton Rail Connection'."

**Response 5.4.1** The electrification capital cost estimates have been carefully compared against and are based on actual incurred costs from recently completed projects, particularly the Amtrak Northeast Corridor 160-mile electrification extension from New Haven to Boston. The cost for the project was also developed through very careful studies. All capital costs also include an additional 15-percent for contingencies. EA/EIR Tables 2.3-3 through 2.3-10 present anticipated project costs and funding and explain the project elements and parameters upon which the costs are based.

Ridership projections for the Caltrain Electrification Program were done very carefully to yield accurate results. Multiple studies were performed and results compared; also comparisons were made with ridership projections for related projects, such as the Caltrain Downtown Extension, to assess reasonableness and accuracy.

The Dumbarton Rail Project is not related to the Caltrain Electrification Project. Please refer to Caltrain's website, or contact the Caltrain Public Information Officer for more information on the Dumbarton Rail Project and other non-electrification issues.

## **5.5 ELECTRIFICATION RELATED TO HIGH SPEED RAIL**

### **5.5.1 U.S. Environmental Protection Agency, Lisa B. Hanf, Manager, Federal Activities Office, May 25, 2004**

"...Integration with Other Rail Improvements

"The proposed project will require the construction of three supply substations and eight paralleling stations to support the power distribution system for electrification. The EA identifies that the proposed project will accommodate a future high speed train system; however, it does not describe how power facilities required for the proposed project will be constructed to accommodate energy source requirements for a high speed train system.

"Recommendations:

"Clarify how the facilities constructed for the Caltrain Electrification Program will be designed to accommodate power distribution requirements for a future high speed train system..."

**Response 5.5.1** Sizing of the OCS conductors and traction power equipment and locations of the proposed traction power supply facilities were based on detailed traction power load flow

computer simulations, which took into consideration probable future train service levels and a wide range of potential equipment outage conditions. Recognizing that the probable service life of the major electrical equipment units is typically on the order of 50-70 years, based on the experience of other electrification systems and the utility industry, traction power system design must be based on a conservative approach and, in this respect, the train service levels were based on the probable maximum capacity of the Peninsula Corridor alignment. Please also see general response: Electrification and High Speed Rail (HSR).

#### **5.5.2 Santa Clara VTA, Roy Molseed, Sr., June 30, 2004**

"Page 1-13, Accommodating Future High Speed Rail: This section should discuss the cost and schedule implications of construction and operation of Caltrain electrification with and without, and before and after the High Speed Rail (HSR) project."

"...Page 2-45, Section 2.3.2.9: The section regarding the staging of electrification, needs more information and discussion especially in relation to grade separation projects, HSR, UP freight issues, UP control of its right of way between San Jose and Gilroy, potentially maintaining two fleets, the associated cost increases, etc.

"Page S-3: The statement is made that electrification facilities would be designed "to accommodate" High Speed Rail (HSR) service as well as Caltrain and freight service. In order to accommodate HSR, Caltrain's electrification project would need to grade separate and four-track the railroad. That effort is not addressed in this document and could not be accomplished within the funding shown in the EIR."

**Response 5.5.2** Please see the general response: Electrification and High Speed Rail (HSR) for information on how the Electrification Program will accommodate high speed rail. The term 'accommodate' is defined in the EA/Final EIR Section 1.2.5 to provide additional clarity. See also response 5.5.5. Grade separation is not part of the Caltrain Electrification Program and is therefore not evaluated in the EA/EIR.

The electrification plan assumes that diesel trains, such as freight trains, the ACE trains and prospective future Dumbarton Corridor services, will operate under the OCS, which would have no impact on those services.

*Construction staging for the revised project is discussed in Section 3.2.3.10, Staging of Electrification Improvements. With the project now extending only between San Francisco and San Jose, the comment about staging on UP right-of-way between San Jose and Gilroy is no longer applicable. Once electric trains begin operation from San Jose to San Francisco, it will still be possible for diesel trains to operate on the entire length of the line. This would require operating vehicles with two types of propulsion systems, but this is necessary in all cases since diesel locomotives are necessary for service to Gilroy, for emergencies, and for operations when the electrical system is being maintained. Since JPB would retain diesel locomotives under any fleet mix scenario, the operating cost of maintaining two fleets between San Francisco and Gilroy is not expected to be meaningfully higher.*

#### **5.5.3 San Mateo County Transportation Authority CAC, Doris J. Maez, April 30, 2004**

"...grade separating the entire line was rejected because of increased costs, but those potential costs are not enumerated, so there is no basis given for comparison (p. 2-52, Section 2.4.4). High speed rail will require grade separating the entire line. Why not address the issue of grade crossing now? Noise reduction is listed as a benefit of electrification, however, train whistles will continue to be sounded at grade crossings. Improvements in safety, noise reduction, and elimination of any grade crossing downtime would certainly be compelling arguments for grade separating the line, at least in urban areas or where heavily traveled roadways intersect with the rail line."

**Response 5.5.3** Please see general responses: Prioritization of Grade Separations and Electrification and Electrification and High Speed Rail.

#### **5.5.4 Santa Clara VTA, Roy Molseed, Sr., June 30, 2004**

"Pages S-7, 1-15, 2-43: It is indicated that Caltrain will retain diesel locomotives for operating service for Dumbarton and Salinas. Would passengers be forced to transfer in Gilroy (to electric trains) from the Salinas trains, thereby eliminating thru trains, or would these diesel trains continue on to San Jose and points north along the electrified Caltrain line? Would these diesel services experience higher operating costs because the vehicles and possibly the crews would not be integrated with the mainline service? Would Dumbarton train passengers also be forced to transfer to electric trains?"

**Response 5.5.4** *The Caltrain Electrification Program no longer includes provision for retaining diesel vehicles for Dumbarton and Salinas operating service. Since the Dumbarton and Salinas projects are not-a-part of the Electrification Program, this EA/Final EIR does not address operations and maintenance and associated costs for either project. However, as outlined above, diesel trains would be able to operate on segments of the Caltrain alignment that have been electrified.*

#### **5.5.5 City of Brisbane, Michael Barnes, Mayor, May 12, 2004**

"...the document notes that "the power supply and distribution system will also accommodate the future development of high speed rail." Since high speed rail could have separate and unique impacts from the proposed project, it should be clear that this environmental document should not be considered a substitute for a full disclosure of the impacts associated with a future introduction of high speed rail."

**Response 5.5.5** The Caltrain Electrification EA/EIR is not intended to substitute for a full disclosure of the impacts associated with a future introduction of high speed rail. These are separate projects with separate planning processes and separate environmental documents. The California High-Speed Rail Authority (Authority) is the state entity responsible for planning, constructing, and operating a high-speed train system serving California's major metropolitan areas. *In August 2005 the Authority approved the program-level Final Environmental Impact Report (EIR)/Environmental Impact Statement (EIS) for the proposed project. On July 9, 2008, the Authority approved a Final Program EIR/EIS for the Bay Area to Central Valley High Speed Train Project.* For more information on the HSR project please see *Section 1.3.3 of the Final EA/EIR* and general response: Electrification and High Speed Rail (HSR).

#### **5.5.6 City of Menlo Park, Kent Steffens, Director of Public Works, May 25, 2004**

"Menlo Park recognizes that it benefits substantially from Caltrain services and wishes to cooperate with the JPB in improving the quality and efficiency of Caltrain services and operations. However, it must also be recognized that the central portion of Menlo Park is adversely impacted by some of the characteristics of Caltrain operations. As a result, any significant change in Caltrain operations is a matter of considerable public concern. This letter is intended to convey those concerns on behalf of Menlo Park's most directly affected citizens.

"After carefully considering the draft document, we believe that there are a number of considerations that must be addressed in more depth before the document would be reasonably adequate for certification.

"Our concerns include the following points:

"...The DEIR notes that the statewide high-speed rail operation that hopes to operate in the Caltrain corridor will need the high voltage overhead type system and that cost-efficiency could be realized by having the Caltrain electrification compatible with it. However, at this point the statewide high-speed rail is nothing more than a speculative project; it is not assured of moving forward. Therefore, it may be premature to lock-in an electrification technology decision on the presumption that high speed rail will be under construction soon to share electrification costs with Caltrain. Caltrain may be wise to defer decision making on the details of electrification until the fate of the statewide high speed rail project is determined. If the statewide high-speed rail project proves a non-starter, Caltrain might be well advised to rely on the less intrusive electric third rail type system rather than the overhead system that high-speed rail would require and that some may regard as unsightly."

**Response 5.5.6** Please see the general responses: Electrification and High Speed Rail (HSR), OCS and Third Rail Power Distribution Systems, and Prioritization of Grade Separations and Electrification.

**5.5.7 City of Mountain View, Matt Pear, Mayor, May 18, 2004**

**“Connection to High Speed Rail**

“The EIR states electrification of the system will “set the stage” for the California High Speed Rail (HSR) project as HSR will use electric train technology. However, if constructed, the HSR project will require all current at-grade crossings to be grade separated and a four-track alignment of the entire Caltrain Corridor. Considering the electrification project (as described in the EIR) does not call for grade separations or four-tracking of the line, the EIR should deemphasize the connection to the HSR project.”

**Response 5.5.7** Please see the general responses: Electrification and High Speed Rail (HSR), and Prioritization of Grade Separations and Electrification.

Given the fact that the recommended electrification system would be the same as that used for the proposed high speed rail system and that the majority of costs incurred for Caltrain electrification would be required for the high speed rail system, it seems appropriate to say that Caltrain electrification would accommodate the California High Speed Rail project.

**5.5.8 Redwood City, Planning & Redevelopment, Gary Bonte, Associate Planner, May 19, 2004**

**“Future High-Speed Rail**

“The proposed electrification will allow for making the Caltrain corridor part of a future Bay Area-Los Angeles high-speed rail line. At this time, there are no specific plans as to how the high speed trains will be accommodated. Will these trains, once on the Caltrain corridor, reduce speed and share track with Caltrain commute trains, or will they require a completely new grade-separated track alignment? If the latter option is proposed, does it make sense to spend money installing new electrification infrastructure, only to have it relocated or replaced a few years later to construct a new, fully grade-separated rail alignment?”

**Response 5.5.8** Please see the general responses: Electrification and High Speed Rail (HSR), and Prioritization of Grade Separations and Electrification. Additional text has been added to the EA/Final EIR Section 1.2.5 to clarify use of the term ‘accommodation’ in the document.

**5.5.9 City of Sunnyvale, John Howe, Mayor, May 12, 2004**

“At its May 11, 2004 meeting, the Sunnyvale City Council considered policy on the electrification of Caltrain. The City Council adopted policy to support Caltrain electrification concurrent with grade separation of roadway crossings in the City of Sunnyvale and elsewhere on the Peninsula corridor for a future four track configuration. Electrification should be done in concert with high speed rail development. This City policy shall be taken into account in assessing environmental impacts of the proposed electrification project.”

“...Relationship to High Speed Rail: There is considerable question whether electrification of Caltrain really “sets the stage” for high-speed rail entry onto the Peninsula. There actually is reason to believe that electrifying Caltrain now would set back the prospects for high speed rail in the corridor. Statements to the effect that electrification would facilitate high speed rail in the Caltrain corridor shall be deleted from the FEIR unless detailed high speed rail alignment and facilities design analyses are conducted and available to support this conclusion.

“The major prerequisite for high speed rail in the JPB corridor is a continuous four-track rail line and probably its complete grade-separation. The CTX project will provide four tracks in only a few short segments of Caltrain. The majority of the line will remain two tracks for now. If the two-track

segments are electrified in place, it will make quadruple-tracking those segments, as well as new grade separations anywhere on the line, much more costly.

"If areas of remaining double-track need to be shifted to accommodate two more tracks, or raised or lowered for new grade separations, much of the pre-existing OCS system may have to be demolished and rebuilt in many long segments. This is because the exact future configuration of a multi-track line has not been determined. Construction staging of any future track shooflys (detours) will have to be provided with temporary OCS facilities, then the OCS rebuilt again. (One possible mitigation may be to obtain diesel locomotives to pull trains during construction so the OCS can be abandoned, demolished and rebuilt). All of this will add to the cost of high-speed rail and so diminish its feasibility.

"A better way to promote future high-speed rail would be to use any available funds to extend the four-track segments and to add grade separations. This would also have more direct and immediate benefits for Caltrain express train service and public safety. Only afterwards or concurrently should the need for electrification be addressed."

**Response 5.5.9** The question of how best to promote high speed rail in the corridor is a complex matter of public policy. It is impossible at this point to say that extending four-track segments and adding grade separations is the best strategy. Another observer might say that building only the most cost-effective capacity improvements and grade separations as well as electrification might be a more effective way to promote high speed rail. However, the purpose of the Caltrain Electrification EA/EIR is not to answer this question, it is to clearly identify the environmental impacts of the Electrification Program. Deciding what improvement projects to fund and when to implement them is a policy decision that will be made by the Joint Powers Board using the processes and structure described in the Caltrain Strategic Plan.

Please see the general responses: Electrification and High Speed Rail (HSR), and Prioritization of Grade Separations and Electrification for more information.

#### **5.5.10 Bay Rail Alliance, Margaret Okuzumi, May 25, 2004**

"We'd like to see the following items addressed in the final EIR:

- "Electrification and HSR. There is a great deal of confusion in the community over the relationship between these two projects. Some seem to have the impression that if we wait long enough HSR will electrify the line for Caltrain, and that to do so earlier would be a "waste". We think it would be helpful for you to discuss these issues in the EIR. We'd like to point out that the complete operating/business model for California HSR is not determined yet. One business model may be for an electrified Caltrain line to rent out access to the corridor to HSR in return for revenue. In Japan, HSR makes money and subsidizes over a dozen commuter/feeder lines."

**Response 5.5.10** Please see the general responses: Electrification and High Speed Rail (HSR), and Prioritization of Grade Separations and Electrification.

#### **5.5.11 League of Women Voters of San Mateo County, Linda Craig, County Council Coordinator, Judy Orttung, Onnolee Trapp, Transportation Co-chairs, May 1, 2004**

"...Modernize Caltrain

"This document states that one of the primary purposes of the Caltrain Electrification Program is "Modernize Caltrain." This comes across as an "image" issue at least as much as a service/technology issue. It also states that the "facilities would be designed to accommodate high-speed rail service." The supporting pages that discuss electrification improvements do not clarify whether or not additional facilities and systems will be needed to "accommodate" high-speed rail. Would a separate track system be required? What portion of the Electrification program would NOT be needed if high-speed rail were not in the future? Since the original high-speed rail schedule has already been delayed by several years, how can we be sure that Electrification Non-Rolling Stock improvements (Table 2.3-5) will be technologically appropriate and adequate for high-speed rail? If the case for Electrification can not stand on its own, quite apart from high-speed rail, the enormous

cost to the JPB member agencies can not be justified. If high-speed rail does eventually utilize the Peninsula corridor, what service impacts will Caltrain experience?”

**Response 5.5.11** Please see the general responses: Electrification and High Speed Rail (HSR), and Prioritization of Grade Separations and Electrification.

The Electrification Program described in the EA/EIR is only for Caltrain. Everything described in the document would be necessary for Caltrain electrification, whether or not the high speed rail project is implemented.

The question of what service impacts high speed rail will have on Caltrain and the corridor in general, should high speed trains be implemented on the Caltrain corridor, will be addressed in the detailed environmental analysis to be prepared by the California High Speed Rail Authority, should the Authority decide to pursue the project. In general terms, Caltrain and the Authority have determined that a four-track alignment will minimize service impacts for both operators.

Also see the response to Comment 2.2.5.

#### **5.5.12 League of Women Voters, Onnolee Trapp, San Carlos Hearing Speaker, May 1, 2004**

“...The EIR states that the electrification facilities would be designed to accommodate high speed rail service, but the supporting pages do not clarify if additional facilities and systems would be needed, would a separate track system be required to accommodate high speed rail and what part of electrification would not be required if high speed rail is not done. We are not so sure about the future of high speed rail in the State legislature right now. Has there been study of diesel locomotives on a completely separated right of way, with all cross streets either separated or blocked? You might get faster service this way if there were not cross traffic, and if high-speed rail is a realistic major planning consideration, there needs to be consideration of grade separation as a first step, with electrification to follow when we know what the high speed rail requirements are and what funding will come with it that might be used for non-rolling stock improvements. In the meantime, we might improve end-to-end running times by more than the 8 minutes reported.”

**Response 5.5.12** The first part of the comment is addressed in Response 5.5.11 above.

In response to the question of diesel trains and grade separations, please see the response to comment 5.3.6.

As outlined in the previous responses, Caltrain’s Strategic Plan describes a long term vision that includes grade separations, capacity improvements, and electrification (among other improvements), as well as a process for decision-makers to use in prioritizing these improvements and linking them with service goals. This prioritization process serves exactly the function outlined in this comment for helping identify the most appropriate improvements to implement and does so in a much more effective manner than could be done in an environmental document for a specific improvement project.

#### **5.5.13 William Blackwell, May 17, 2004**

“Thanks for returning my call last week. With your help, I found the Caltrain Electrification Program Draft EIR reference on costs and funding.

“There is no mention of high-speed rail as a funding source, and, to my surprise, I didn't find a mention of HSR anywhere in the report.

“The draft HSR report just published assumes that the HSR program will fund “1/2 the cost of electrifying the Caltrain corridor” (copy enclosed), and so I supposed HSR would be included as the principal funding source. Hence, my question to you as to whether or not the Caltrain electrification program is contingent on the availability of HSR funds.

“I also supposed that the capital costs shown for Caltrain electrification, signaling, etc., would enable future shared use with HSR without further costs, although the report doesn't say so. Is that true?

"The Caltrain electrification program stops at the 4th & King site in San Francisco. I assume that costs for electrifying the additional 1.3 miles to the TBT are included in the Caltrain DTX program.

"For your information, I met with Darrel Maxey in San Carlos a year ago and reviewed with him what I thought was an interesting architectural concept for the future development of the 4th & King yards. Enclosed is a copy of my remarks at the SFRA certification meeting May 20th (which I think you heard). The supporting material includes several of the drawings that I presented to Darrel."

**Response 5.5.13** Please see the general responses: Electrification and High Speed Rail (HSR), and Prioritization of Grade Separations and Electrification. High speed rail is discussed in several sections of the Caltrain Electrification EA/EIR. For example, Section 1.2.5 is "Accommodating Future High Speed Rail".

The Caltrain Electrification Program is designed to be a stand-alone project that is consistent with plans for the future electrified California high speed rail system. The Caltrain Strategic Plan presents several future scenarios for Caltrain and sets a framework for implementing electrification under each of these scenarios. The Strategic Plan identifies electrification as an enhancement required for Caltrain operations and calls for close coordination with the California High Speed Rail Authority on design and funding. Funding for the Electrification Program includes \$61 million in *Proposition 1B and High Speed Rail Connectivity Funds*; see Table 2.3-7, *Funding Sources for Caltrain Electrification Program with Preferred EMU Project*.

Caltrain electrification would be designed to be compatible with future shared use by high speed rail. The costs for electrifying the line segment from Fourth and King to the Transbay Terminal are included in the Transbay Terminal project's budget.

#### **5.5.14 Elizabeth and Marsden Blois, May 25, 2004**

"Even if the Peninsula corridor electrification service is completed, the Peninsula is not a suitable location for an expansion to a bullet train to Southern California. It would have too much of a negative impact on the residential neighborhoods of the Peninsula. If another location cannot be located, then transfer in the Gilroy station should be proposed. I will work hard to defeat any bond measure proposed to build this rail line on the Peninsula. I will also actively oppose any work plans that call for construction and then pull-down and repeat work."

**Response 5.5.14** The Caltrain Electrification EA/EIR evaluates electrifying the Caltrain line. The electrification design would be consistent with that needed for future high speed rail. Should the California High Speed Rail Authority choose to pursue the Caltrain alignment for a high speed rail system, the Authority will prepare a detailed environmental impact analysis on that project. The Caltrain electrification project would be designed to minimize the need for repeat work or modifications insofar as practicable.

#### **5.5.15 Paul Casey, April 29, 2004**

"Please extend to Los Angeles."

**Response 5.5.15** The California High Speed Rail project is a separate project from Caltrain electrification. The California High Speed Rail Authority has prepared and circulated a program level environmental analysis of a statewide high speed rail system. One route extends along the Caltrain right of way from San Francisco to San Jose and on to Los Angeles. Should the Authority choose to proceed with this alignment, it would prepare a detailed environmental analysis of the project.

#### **5.5.16 Andrew Cigolie, May 4, 2004**

"Include the option of waiting for when hi-speed rail comes through to build out the line to 4 tracks and electrify it at the same time. I believe that significant sums of funds will be wasted by electrifying the line in its current configuration to only have hi-speed rail come through within 10 years later and need to redo much of the work. There should be some analysis around when to do the electrification."

**Response 5.5.16** Please see the general responses: Electrification and High Speed Rail (HSR), and Prioritization of Grade Separations and Electrification for more information on the timing of electrification and its costs.

**5.5.17 Diana Peterson, Menlo Park, May 25, 2004.**

"I have grave concerns over the electrification environmental impact report. I believe:

"...that a major expense of electrification would be incurred, only to be ripped out and re-done when the High Speed Rail goes in."

**Response 5.5.17** Please see the general responses: Electrification and High Speed Rail (HSR), and Prioritization of Grade Separations and Electrification for more information on the timing of electrification and its costs. Also note that only one-quarter of the capital cost of the Electrification Program is for elements that depend upon the track alignment. If grade separations are to be constructed in given locations, the electrification designers would use conceptual plans and similarly would use conceptual designs for a four-track alignment accommodating high speed rail to reduce the amount of replacement that would be required.

**5.5.18 Jack Ringham, San Carlos Hearing Speaker, May 1, 2004**

"It seems to me that the EIR gives very little consideration to the relationship between electrification and the high-speed rail system other than to say that the two should be compatible. If HSR is going to be implemented, electrification should either be a part of it or come after it so we are not putting up overhead wires and then tearing them down for HSR. If it comes as part of high speed rail or after it, when we have segregated grade crossings, seems to me then there is reason to reconsider a third rail system rather than overhead wires. If there are no grade-level crossings on the system, why can't we have a third rail system like BART and eliminate the ugly, overhead wires? Also, one of the reasons you mentioned overhead wires was it would be compatible with high speed rail systems where you probably would not have grade crossings in rural areas. But I think you can have electric locomotives that were equipped to take their power from either overhead lines or the third rail, so that the high speed rail system could have dual purpose locomotives and Caltrain could have all third rail service."

**Response 5.5.18** Please see the general responses: Electrification and High Speed Rail (HSR), OCS and Third Rail Power Distribution, and Prioritization of Grade Separations and Electrification for more information on the relationship between high speed rail and Caltrain electrification and on third rail power distribution.

**5.5.19 Arthur Ringham, May 3, 2004**

"The Draft EIR appears to be based on the premise that electrification of the Caltrain Corridor would precede the implementation of the proposed California High-Speed Rail System. The second paragraph of the summary section S.2.2.1 (Overhead Contact System) states that this (Caltrain electrification) system is compatible with high-speed rail and will accommodate future development of high-speed rail in the Caltrain corridor without any significant overhaul of the electrification system.

"Based on the plans in the Draft EIR of the proposed California High-Speed Train System, the following major construction steps would be required along the Caltrain corridor to implement high-speed rail:

1. "Adding two sets of tracks along the entire Caltrain right-of-way, increasing the total number of tracks to four.
2. "Constructing grade separations at all crossings which would require raising and/or lowering the tracks at many crossings where grade separations do not already exist.
3. "Modifying existing grade separations to accommodate four tracks.



4. "Adding and later removing two sets of temporary tracks along most sections of Caltrain right-of-way to maintain service during construction of the high-speed-rail system.

"If electrification, including the Overhead Contact System, were implemented prior to installation of the high-speed-rail system, the OCS overhead wires and supports would have to be reconfigured several times during the implementation of high-speed-rail. This would constitute a major overhaul of the electrification system and involve significant cost.

### **Reconsider Timing and OCS**

"Since the proposed California high-speed-rail system is planned to be an electrified system, consideration should be given to coordinating implementation of Caltrain electrification with the implementation of high-speed-rail even if this means delaying electrification. This could eliminate the costs of multiple reconfigurations of the OCS overhead wires and supporting structures that would otherwise be necessary if electrification were to precede high-speed rail.

"Coordination with the California High-Speed Rail Authority should also be considered with regard to the possible use of a third rail system instead of OCS. The Caltrain Electrification Program study previously withdrew the third rail system from consideration for two major reasons.

"First, people safety, which requires controlled access to the rail corridor to prevent accidental contact with the electrified third rail. This would not be a problem with the high-speed rail system since it would be grade separated along the entire Caltrain corridor, with controlled access similar to BART where the people safety issues have been resolved.

"The second reason was that the power configuration of third rail (low voltage DC) would not be compatible with that planned for California high-speed rail (high voltage AC). If this incompatibility could be resolved, the third rail system would provide the following advantages:

1. "It should cost less to install than OCS. An economic analysis should be made to quantify the difference in cost.
2. "It would avoid the negative visual impacts associated with the poles, supports and overhead wires of OCS.
3. "It should cost less to maintain than OCS since maintenance work would be done at grade level.
4. "It would not have adverse impacts on heritage or significant trees along the right-of-way and would avoid the costs of ongoing tree trimming to maintain safety clearance from the OCS wires.

"Caltrain and the California High Speed Rail Authority should jointly explore ways to deal with the power incompatibility (perhaps special locomotives which could operate from either a third rail or OCS power source). If this incompatibility could be resolved, the advantages of third rail should benefit Caltrain and the people along its right-of-way. Third rail could also be feasible in other urban areas to be served by California high-speed rail where overhead OCS systems would have a negative visual impact.

"Because of California's financial situation, availability of funding will ultimately determine what gets implemented and when. Hopefully it will be possible to coordinate Caltrain electrification with the California High-Speed Train System if and when they are funded. This should involve less overall cost than if the two programs are implemented separately."

**Response 5.5.19** Please see the general responses: Electrification and High Speed Rail (HSR), and Prioritization of Grade Separations and Electrification for information on the timing of electrification and policy issues surrounding its implementation schedule.

## **5.6 ELECTRIFICATION RELATED TO TRANSBAY TERMINAL/DOWNTOWN EXTENSION**

### **5.6.1 City of Mountain View, Matt Pear, Mayor, May 18, 2004**

#### **“Transbay Terminal Project**

“...A key component of the Transbay Terminal project is to extend Caltrain from the Fourth and King Street station to the planned Transbay Terminal building. However, for this project to be successful, electrification of Caltrain would be required or dual mode diesel engines would need to be used. The EIR does not include a discussion of these facts and, considering the direct connection the Transbay Terminal project has to electrification, a discussion on this topic should be included in the final EIR.”

**Response 5.6.1** The Caltrain extension from Fourth and King to the Transbay Terminal would be electrified. The costs and impacts of electrification on this segment are included in the *certified* Transbay Terminal/Caltrain Downtown Extension Final EIS/EIR. Two options were considered in the Transbay Terminal EIS/EIR: electrification of the Caltrain line south of Fourth and King, and no electrification. Should the Caltrain line not be electrified, the Downtown Extension project would purchase dual-mode locomotives for operation on both the electrified and non-electrified sections of Caltrain. Please see general response: Electrification and Transbay Terminal / Downtown Caltrain Extension Project for more information.

### **5.6.2 Robert Olton, May 1, 2004**

We oppose the Caltrain Electrification Program because:

“1. It is not necessary to have this project on the entire Caltrain system in order to extend Caltrain to the Transbay Terminal in San Francisco.”

**Response 5.6.2** It is not necessary to electrify Caltrain in order to extend Caltrain to the Transbay Terminal. Please see general response: Electrification and Transbay Terminal / Downtown Caltrain Extension Project for more information.

## 6.0 TRANSPORTATION / TRAFFIC / PARKING

### 6.1 RIDERSHIP

#### 6.1.1 Bay Rail Alliance, Margaret Okuzumi, May 25, 2004

"We feel that electrification will encourage more residential development near stations, since noise and air pollution impacts will be greatly reduced, and that this will result in additional riders for Caltrain."

**Response 6.1.1** Electrification would improve the environment around Caltrain stations, especially by reducing the noise and air pollutant emissions of train operations. As described in the EA/EIR, Section 1.1, Need, reducing noise and improving regional air quality are among the primary purposes of the Caltrain Electrification Program. Whether residential development increases around Caltrain stations as a result will depend on the development plans of the specific localities. Some communities, like Palo Alto and Redwood City, are already encouraging transit-oriented development near their Caltrain stations. The intention of transit-oriented development is to bolster transit ridership by clustering origins and/or destinations around mass transit stations.

#### 6.1.2 League of Women Voters of San Mateo County, Linda Craig, County Council Coordinator, Judy Orttung, Onnolee Trapp, Transportation Co-chairs, May 1, 2004

"...Ridership and Travel Time

"Ridership and Travel Time improvements are very insignificant for Electrification compared to No -Project. An increase of 4118 passengers (Table 3.15-5) and reductions of 2-4 minutes of travel time (Table 3.15-6) are not cost-effective justifications for a \$1.0 billion project. However, these figures must be reconciled with the travel times (Table 3.1-16) in the Transbay Terminal EIR; both claim to use the same Parsons September 2001 source, but the Transbay Terminal EIR time savings are 14-15 minutes for most trips.

"...Ridership and Travel Time

"...The public will quickly compare the \$1.5 billion cost of BART to SFO and its projected 70,000 passengers (yet to materialize) and decide that Caltrain electrification would cost too much. While Caltrain may argue that its cost/mile is far less than for BART, there should be an "apples to apples" comparison. How much rolling stock and at what cost was included in the BART project cost? Even without rolling stock, electrification would cost \$456.69 million. There must be a table of average annual cost/rider and cost/new rider, as in the Caltrain Strategic Plan, and an explanation of how these costs are calculated, for both No-Project and Electrification. This would clarify the cost of the improvements necessary to upgrade the system for No-Project and the added cost for Electrification. The Caltrain Strategic Plan shows that the major cost/new rider is for the status quo upgrade. It also projects a much larger difference in ridership due to electrification. This discrepancy must be explained.

"...Do the ridership projections take into account new riders resulting from feeder service on Dumbarton, Salinas, and Monterey lines/extensions? Provide a table showing these figures, with projected dates for these added services."

**Response 6.1.2** Please see general responses: Ridership Benefits of Electrification, Caltrain Electrification Benefits, Electrification and Transbay Terminal / Downtown Caltrain Extension Project, and Electrification Cost/Benefit Analysis.

*The time savings and ridership increases are not the justification for the Electrification Program, but side benefits of it. The time savings presented in the EA/Draft EIR were based primarily on the projected effects of electrification on the Baby Bullets, which were expected to have minimal (3 percent) time savings. The EA/EIR (Section 3.15.5.1, Table 3.15-6) has been updated with*

*planned train schedules to also reflect the effect of time savings on local and limited stop trains, which make up the bulk of the Caltrain service. The Parsons source referenced in the comment was a ridership model, which was used to address multiple projects and alternatives. The time savings presented in the Transbay Terminal EIS/EIR are for that project only and do not show the savings of electrification. The combination of the two savings would be a cumulative savings on the order of 22 to 23 minutes for the longest trips.*

Electrification alone would result in a *projected 9% increase in Caltrain ridership*. The comment contributor suggests that the primary metric for judging transit capital expenses is how many new passengers the investment attracts and at what cost per passenger. Ridership increases are an incidental effect of electrification and this metric is simply meaningless in this case, as are comparisons to other rail extension projects. See Responses 2.1.3 and 2.2.11 with respect to ridership and capacity increases. A primary reason to electrify Caltrain is to increase its capacity through increasing train performance. Otherwise Caltrain would not be able to carry its projected future ridership without expensive investments in a new signal system, track expansion, and operating expenses that would exceed the cost of electrification.

The Strategic Plan does not show the ridership from electrification without including other factors such as an increase in the number of trains and an extension to the Transbay Terminal. Thus, no direct comparison can be made between the increase shown in this document and the Strategic Plan. Both documents use the same ridership forecasts, however, and show them for different cases, so there is no discrepancy. Finally, the ridership projections do not include Dumbarton or Monterey County services.

#### **6.1.3 Santa Clara VTA, Roy Molseed, Sr. Environmental Planner, June 30, 2004**

*"Page 1-4, Current and Future Transportation Demand in the Caltrain service area: There is a great deal of out of date information in this section that should be updated.*

*"...Page 2-22, Figure 2.3-13 and page 3-76: It is not clear from this photo if the potential site of traction power facility at Lawrence Station would impact existing park and ride. Station already has insufficient parking and shows a deficit in 2020.*

*"...Page 3-129, table 3.15-5: Projected boardings for many stations are very questionable. The project San Martin daily boardings decrease from 281 in 2003 to 32 in 2020 appears to be in error in the absence of any explanation. Similarly, the projection that College Park Station ridership will increase from 380 to 1,521 seems incorrect given the very few trains that actually serve the station at this time and are expected to service this station in the future. Further analysis should be done and additional narrative should be added to explain projected ridership changes that appear incorrect, including projected future ridership with and without electrification at Baby Bullet and other stations."*

**Response 6.1.3**      *The information presented in Section 1.2.1 has been updated using information from the following sources: 2000 Census, Association of Bay Area Governments Projections 2005 data, and Peninsula Corridor Joint Powers Board data.*

*With the revised project, there is no longer a proposed Lawrence Station; hence, the project would not affect the subject park and ride facility.*

*Table 3.15-5 has been updated based upon a February 2007 passenger count survey. Passenger boarding projections were developed using Santa Clara Valley Transportation Authority's Travel Demand Ridership Model and the 2005 - 2030 ABAG Land Use Series. A growth factor was applied to 2030 ridership results using ABAG 2007 - 2035 Land Use Series data. The primary goal for the modeling was to estimate system ridership since large changes in ridership were not expected at the station level. Precise predictions at the transit station level are difficult to achieve in the MTC regional model, from which the SCVTA model is derived.*

#### **6.1.4 Jim Bigelow, San Carlos Hearing Speaker, May 1, 2004**

“...I think the figures in the EIR for ridership which is 4,200 new riders, I think you can do a lot better than that. If employees can see an exciting, electrified, quicker service, I think that will be a benefit and you will get more ridership. ...It's getting late and I need to shut it off. But I agree with Onnolee that ridership is too low. You can do better than 4,200 if you get this thing rolling and have the right appearance.”

**Response 6.1.4** Caltrain agrees that a modernized and refined train service could attract more riders than projected. The analytical model used to project ridership cannot quantify or include intangible factors such as the ‘image’ of a modernized, or more sophisticated train system. Please see general responses: Ridership Benefits of Electrification.

#### **6.1.5 Elizabeth and Marsden Blois, May 25, 2004**

“Train ridership has not increased significantly and this expansion is overkill.”

**Response 6.1.5** Electrification results in a 9% ridership gain, but the main purposes of electrification are to improve air quality, reduce noise, improve Caltrain efficiency and improve Caltrain's image. Please see general responses: Ridership Benefits of Electrification and Caltrain Electrification Benefits.

#### **6.1.6 Jeff Carter, San Carlos Hearing Speaker, May 1, 2004**

“...I also question and think the ridership figures with what you can do with electrification, I think the ridership increases could be a lot more significant than what is stated in the EIR. Thank you.”

**Response 6.1.6** Please see general response: Ridership Benefits of Electrification.

#### **6.1.7 Martin Engel, May 25, 2004**

“I oppose the plan to electrify the Caltrain commuter system. Here's why:

“...Upgrading an underutilized commuter system will not increase ridership.”

**Response 6.1.7** Please see response to *Comment 6.1.5*.

In addition, Caltrain cannot be defined as an ‘underutilized’ commuter system. The recent downturn in Caltrain ridership is related to economic conditions. Please refer to the Response to Comment 2.2.21 for a discussion on this subject.

#### **6.1.8 Hamid Farzi, May 20, 2004**

“I suspect that the overall figures for the ridership of the Caltrain system is grossly overestimated, whereas the budget of these projects are obviously grossly underestimated.”

**Response 6.1.8** Please refer to response to Comment 5.4.1.

#### **6.1.9 Jim Kelly, May 1, 2004**

“4,200 ridership estimated gain vastly underestimated. The pendulum swing to transit per increasing traffic and fuel costs.”

**Response 6.1.9** Caltrain anticipates that increasing fuel costs and rising traffic on Peninsula roadways will attract more riders to Caltrain. Please see general response: Ridership Benefits of Electrification.

#### **6.1.10 Hank Lawrence, San Carlos Hearing Speaker, May 1, 2004**

"...Ridership right now is based upon, in my opinion, if it's going to take me longer, I'm not going to do it. If it's going to require too many changes, I'm not going to do it. If you can make the trains really convenient, I mean, I think your estimates of increase in ridership are really very understated. What you're doing, you're looking at everything like sort of ceterus parebus conditions; nothing else is changing, but if you can make the train more enticing by having faster times, which I think the bullet trains will really increase ridership dramatically. I think that would be a really good thing, if you could do that, I think you would have a much greater increase in your ridership than you anticipated."

**Response 6.1.10** Caltrain anticipates that service improvements, such as Baby Bullet service or the Caltrain Downtown Extension, will attract more riders than Electrification per se. However electrification is expected to increase ridership by about 9%. Electrification also will help improve Caltrain's efficiency thus *improving service throughout the corridor, thereby attracting additional riders*. Please see general responses: Ridership Benefits of Electrification and Caltrain Electrification Benefits.

#### **6.1.11 Ali Patricia McKeon, May 21, 2004**

"I definitely feel that the low ridership in this area does not constitute such drastic changes by Caltrain. Please express my opinion at your May 25<sup>th</sup> meeting."

**Response 6.1.11** The recent downturn in Caltrain ridership is related to economic conditions, which are expected to improve. Planning for additional train service is done based on projections by the Metropolitan Transportation Commission (MTC) and the Association of Bay Area Governments (ABAG), which take into account the expected long-run population and employment trends and general economic health of the region. It is critical to plan now for future demand because of the long lead time for increasing train service.

#### **6.1.12 Judith M. Oranasu, Ph.D., May 25, 2004**

"Upgrading an underutilized commuter system will not increase ridership."

**Response 6.1.12** Please refer to the response to Comment 6.1.5.

### **6.2 TRAVEL TIME**

#### **6.2.1 Santa Clara VTA, Roy Molseed, Sr. Environmental Planner, June 30, 2004**

"Page S-1 and 1-1: Acceleration and deceleration travel time reduction benefits should be quantified."

"...Page 3-130: The travel time savings discussion needs to be clarified to quantify travel time savings onboard Caltrain trains for a series of station parings for Baby Bullet, Limited and Local service. This data should be in addition to data in Table 3.15-6, which show door-to-door time savings from central city to central city."

**Response 6.2.1** The benefits of improved acceleration and deceleration are reduced travel times. Table 3.15-6 in the revised EA/EIR compares travel times for a variety of typical station stopping patterns between diesel and electrified trains. Electrification is not intended to improve travel times in comparison with the Baby Bullets, but would improve travel times for local service that makes numerous stops. Please also see response to Comment 6.2.2.

#### **6.2.2 City of Sunnyvale, John Howe, Mayor, May 12, 2004**

"...Indeed, Table 3.15-6 indicates that projected net time savings between the downtowns of San Francisco and San Jose will be only two minutes. Under "Travel Time" on Page 3.130 is the admission that the maximum time savings of only 12 per cent would be for the local trains; express

trains would not save more than three percent because they stop less and therefore cannot benefit much from improved acceleration anyway. As a result, all the time-savings benefits listed in Table 3.15-6 are miniscule. The FEIR shall explain how these time savings were calculated without quantitative data on acceleration/ deceleration rates.”

**Response 6.2.2** The travel times in Table 3.15-6 in the EA/DEIR were based *only* on the three percent savings for the Baby Bullets, *estimated from Caltrain train simulation studies which considered the acceleration and deceleration characteristics of proposed equipment. The table has been revised to show representative average times for all trains based on planned train schedules. With the Electrification Program Alternative, most Caltrain users would experience time savings of one to eight minutes from faster and more frequent peak-period trains. Note that the Electrification Program is being proposed to address capacity and operating (fuel) cost issues, not train speed*

### **6.2.3 Richard Mlynarik, May 24, 2004**

“...3-131 table 3.15-6: Well, if you're trying to kill off the electrification program, presenting your data in this format is surely the best way to do it. VTA loves ya', baby!”

**Response 6.2.3** See responses to Comments 6.2.1 and 6.2.2.

## **6.3 CROSS TRAFFIC DELAY**

### **6.3.1 BART, Roger Avery, Engineering Department, May 25, 2004**

“The report does not address the increase in time that the grade crossings are ‘occupied’ by the trains as the number of trains increases due to the popularity of the service. This increased occupation time also increases as the speed increases due to the increased warning time given to road vehicles and increased braking distance of the trains. Any increase in crossing occupation time will increase local air and noise pollution and the number of grade crossing accidents as people become frustrated with the wait time.”

**Response 6.3.1** Analysis of six at-grade crossings over the period from 2001 through 2020 found that the Caltrain Electrification Program would have a small positive effect on traffic delay at the crossings compared to conditions that would exist without the Electrification Program. Because the projected delay reductions were the result of improved operating performance of the trains made possible by electrification, which permits faster acceleration and deceleration, this conclusion can be generalized to the entire corridor proposed for electrification. The crossings studied were Sunnyvale Avenue in Sunnyvale, Castro Street in Mountain View, Ravenswood Avenue in Menlo Park, Third Avenue in San Mateo, Broadway in Burlingame, and San Bruno Avenue in San Bruno.

## **6.4 TRANSIT IMPACTS**

### **6.4.1 U.S. Environmental Protection Agency, Lisa B. Hanf, Manager, Federal Activities Office, May 25, 2004**

“...Integration with Other Rail Improvements

“In addition, the EA does not describe how construction of the Caltrain Electrification Program will be integrated with other rail improvements, including construction of the “Baby Bullet” express trains and pedestrian and bicycle access improvements.”

“...Recommendations

“Address how the proposed project will be integrated with the construction and operation of the ‘Baby Bullet’ express service and pedestrian and bicycle access improvements.”

**Response 6.4.1** As part of preparation of Caltrain's capital investment strategy, the JPB will develop detailed plans for implementing proposed improvements to the railroad. These plans will be developed to minimize impact on passengers and surrounding areas and maximize benefits, as well as to allow efficient and cost effective construction. Caltrain's Baby Bullet service began operation in June 2004. Apart from very limited construction impacts, electrification would not affect this service. Caltrain has an ongoing program of pedestrian and bicycle improvements to stations and services. Again, apart from very limited construction impacts, electrification would not affect these facilities however, any proposed improvements would be integrated with the Electrification Program in a manner designed to minimize impacts and maximize benefits of the combined programs.

#### **6.4.2 Santa Clara VTA, Roy Molseed, Sr., June 30, 2004**

"Page 2-51, Section 2.34.3.3: The statement is made that 'It should be noted that reductions in service of both SamTrans and Muni anticipated with the increase in projected Caltrain service would result in operating cost reductions for these transit operators.' Have SamTrans and Muni adopted plans to reduce service with increased Caltrain service? What level of service cuts have SamTrans and Muni have identified and what is the resulting cost savings?

"...Page 3-121, Table 3.15-1 lists VTA as the source. VTA was not the source for this information regarding Muni and SamTrans service. This table is out of date and should be updated (e.g. VTA's Tasman West light rail line serves the Mountain View Caltrain Station, but isn't listed, ACE and Capitol Corridor train services are not mentioned and the VTA bus routes have changed significantly over the last few years.) Similarly, the corresponding narrative on page 3.124 should be updated."

"...Page C-79: VTA had requested a discussion of electrification's impact on our AFO track circuits in our NOP comments. This has not been addressed in this document but should be addressed in the final EA/EIR."

**Response 6.4.2 Muni and SamTrans Operating Cost Savings** – The statement in the EA/DEIR attributing service reductions and cost savings to Muni and SamTrans was incorrect; it has been removed from the revised EA/EIR.

**Table 3.15-1** – This table has been updated in the revised EA/EIR.

**Impact on AFO Track Circuits** – Please refer to the response to Comment 2.3.9 regarding inductive influences and effects on paralleling low voltage dc OCS conductors. During the preliminary engineering, an assessment of the proposed traction power supply and distribution systems determined that EMF field levels would be similar to those in the vicinity of utility transmission lines and distribution lines. Since the VTA AFO track circuits operate in that kind of environment, it is not anticipated that there would be any significant impact. During final design of the electrification system, this issue will be investigated in detail and, if any impacts are identified, mitigation measures will be developed in accordance with the relevant IEEE or MIL standards.

#### **6.4.3 City of Santa Clara, Geoffrey Goodfellow, Director Planning and Inspections, May 25, 2004**

"...Section 3.15 describes the existing transportation network and outlines future highway, rail and bus transit improvements. A discussion of the voter approved BART extension project, from Fremont to Santa Clara, is not provided in the analysis of potential impacts. An EIR/EIS for the BART extension project has been circulated and preliminary engineering is underway that includes the location and conceptual design of the route alignment and station facilities. The City of Santa Clara is the terminal station for the BART route and is proposed to include a parking structure and underground or overhead pedestrian crossing, in addition to station and maintenance facility. The EA/EIR for the Caltrain Electrification Program needs to address potential design conflicts and/or coordination efforts necessary to integrate the two systems into a compatible and functional design. Overhead clearance of the catenary system, OCS pole locations, and location or type of pedestrian crossings will require consideration and coordination between the two transit providers."



**Response 6.4.3** Caltrain agrees that the Electrification Program must be carefully coordinated with the proposed BART project to San Jose and Santa Clara. The EA/Final EIR contains additional text to describe the BART extension as a related project; see Section 1.3.5. Caltrain currently has design standards that recognize its long-range plan to electrify the railroad in terms of overhead clearance requirements and right-of-way width. The pedestrian crossing design requirements are well known and were used in the design of the Caltrain/BART Millbrae intermodal station. A similarly coordinated design process would be completed at Santa Clara as part of the final design for the BART station. Finally, as part of the design for increasing the number of Caltrain tracks through the Santa Clara area, lateral requirements will be revisited and planned in coordination with the BART project.

## **6.5 ACCESS MODE TO CALTRAIN STATIONS**

### **6.5.1 Metropolitan Transportation Commission, Bob Bates, Caltrain Liaison, May 25, 2004**

"The MTC staff has reviewed the Caltrain Electrification Program Environmental Assessment/ Draft Environmental Impact Report (EA/DEIR) for the electrification of the Caltrain line from its northern boundary in San Francisco to its southern terminus in Gilroy.

"Our comments encompass the Project Description and Environmental Settings and Consequences chapters. Thank you for the opportunity to allow MTC to comment on the content of the environmental document for the proposed project.

"Section 3.15 indicates that ridership will double on Caltrain over the next 15-20 years. However, there is no discussion of the impact this will have on how riders access the station. Table 3.15-7 indicates that parking supply in 2020 will be oversubscribed by over 3,000 spots corridor-wide. Section 3.15.4 notes that at many locations bicycle lockers are fully rented with waiting lists. While section 3.15.5.6 notes that linked transit trips will increase in the corridor, it is important to note that accessing busy stations with local transit will be critical, as will the provision of access to stations for non-motorized travelers."

**Response 6.5.1** *Table 3.15-8, Caltrain Parking Supply and Demand Projections, has been updated to include results from SCVTA's travel demand ridership model projections. The results indicate that a parking supply shortfall of approximately 1,000 spaces would occur for both the No-Electrification and Electrification Alternative conditions. The anticipated shortfall in parking at Caltrain stations will be addressed as part of Caltrain's Capital Improvement Program. Additions to parking supply will be considered at such a time as field conditions indicate the need for such increases. In those locations with constrained or limited opportunities for expanded parking, riders driving to a Caltrain station and experiencing a lack of sufficient space, would be expected to seek parking at the next station. That is why the EA/EIR does not highlight adverse effects on access to stations as an impact of the Caltrain Electrification Program. The JPB's Capital Improvement Program has identified financial resources to address the need for additional parking and other access improvements as they become necessary. The JPB will periodically review the relationship between parking supply and demand and program resources to correct imbalances when they become apparent.*

Bicycle parking is also expected be expanded in the future as part of Caltrain Capital Improvements. Anticipated vehicle and bicycle parking expansions will therefore reduce the critical nature of local transit and non-motorized access. Planning and implementation of access improvements to Caltrain stations are generally the responsibility of the appropriate JPB member agency. A good example is the San Mateo County Transit District's recently completed rail station access plan which presents recommendations for improving rail station access by improving pedestrian facilities, bicycle facilities, shuttle service, fixed route transit service, and parking. The improvements identified in this plan will be implemented in the coming years as opportunities arise. Additional text has been added to EA/ Final EIR Section 3.15.4, *Existing Non-motorized Transportation, which further addresses these issues.*

### **6.5.2 Doug Rajiv, Sunnyvale Hearing Speaker, April 24, 2004**

I've been a regular Caltrain commuter for the last four years commuting from Sunnyvale to...I have some reservations, the main thing is the connectivity between the Caltrain stations to city area or work area...employers and city transportation have buses...I've observed after office hours especially after 6 or 7, there is absolutely sometimes nothing to reach those stations, and that's one of the most important concerns people have is how are we going to reach the station, because due to economy, we have to work at least 12 to 14 hours a day. It's a great project, electrification, but raising ridership that's what everybody is looking at. Are you having plans of having more connections, especially between small stations where there is hardly any infrastructure there?

**Response 6.5.2** Improving access to Caltrain stations throughout the day is an important Caltrain strategic objective. Caltrain's Strategic Plan calls for addressing station access needs with a balanced approach that includes coordinating service with connecting transit operators; promoting walking, bicycling, carpooling, and carsharing to and from stations; improving access for people with disabilities, and finding innovative and effective solutions for meeting parking demand. In general these access improvements are planned and implemented by local agencies which are more closely connected to the specific needs of each particular station. As suggested in the comment, one important way of improving access is to extend the hours of operation of connecting service; Caltrain will consider this recommendation in developing station access improvement plans.

## **6.6 PARKING**

### **6.6.1 Santa Clara VTA, Roy Molseed, Sr., Environmental Planner, June 30, 2004**

"Page 3-134, Section 3.15.7: The statement that parking impacts have "no adverse impact" is not substantiated. The assumed parking increase of 3,258 is not contained in any Caltrain JPB-approved capital improvement program. There is no discussion of a station-specific parking plan for providing additional spaces. The chart shows a demand for parking at Mountain View of 2,943 spaces. It is unclear where and how this amount of parking will be provided.

"Page 3-135: Some station parking demand projections for 2020 are lower than current use-Tamien 108 vs. 176, San Martin 14 vs. 79, Sunnyvale 204 vs. 209 are examples. These appear incorrect."

**Response 6.6.1** Please see response to *Comment* 6.5.1. There is no discussion of station specific parking plans because ridership forecasts by station are not extremely accurate. For example, experience with the recently implemented Caltrain Baby Bullet service shows that passengers are willing to drive farther to stations with express service even if total time savings are small, a result that is not consistent with transportation demand modeling. Given the modeling imprecision, Caltrain's approach to station access is to work with local agencies in planning and implementing access improvements with the objective of meeting overall demand (i.e. the 7,417 systemwide parking spaces) rather than specific numbers of spaces at particular stations. Caltrain works with local governments on improving rail station access. By working with local agencies it is possible to better serve the needs of individual communities in providing access to stations. The fact that model forecasts do not agree with observed parking demand is also due to the inability of models to accurately project station-by-station parking demand.

### **6.6.2 San Mateo County Transportation Authority CAC, Doris J. Maez, April 30, 2004**

"There are 177 parking spaces listed for the San Bruno station (p. 3-135, Table 3.15-7). Does that represent the current location at Sylvan Avenue? The number of spaces at a relocated station at San Bruno Avenue may be less."

**Response 6.6.2** Tables 3.15-4 and 3.15-7 in the EA/Final EIR have been changed to reflect the current total of 168 spaces at the Sylvan Avenue station.

**6.6.3 City of San Mateo, Department of Community Development, Stephen Scott, Principal Planner, May 14, 2004**

"Table 3.15-4 (page 3-127): This table should be modified to include the fact JPB parking exists and that counts for the two-level parking garage for the San Mateo Station. The City leased the parking in this garage from the JPB for a 35-year term, with an option for a second 35-year term. The asterisk should be modified to indicate that parking at this garage is shared between the City and JPB. There are a total of 243 spaces in the garage; 79 on the surface level and 164 below grade. Of the total, 18 are 2-hour limited parking while the balance are 10-hour spaces. Summer 2003 occupancy survey data indicates that the upper (surface) level averaged 66% occupancy (52 spaces), with a high of 91 % during the 7:00 PM to 8:00 PM hour. The lower level averaged 56% occupancy (96 spaces), with a high of 82% during the 1:00 PM to 2:00 PM hour. (Data from Public Works) "

"...Table 3.15-7: This table indicates a parking demand for 1,026 spaces at the Hillsdale Station under the electrification alternative. During the Corridor Plan process, the City was told that the parking demand for the Hillsdale Station was 1,360 spaces. Please clarify the distinction between these two parking demand numbers."

**Response 6.6.3** Data from the comment have been added to Tables 3.15-4 and 3.15-7 in the EA/Final EIR. The Caltrain Electrification EA/EIR parking demand projections are for electrification only; the Corridor Plan projections include other Caltrain improvements that would increase demand. For purposes of long-term planning the larger figure should be used.

**6.6.4 City of Santa Clara, Geoffrey Goodfellow, Director Planning and Inspections, May 25, 2004**

"...The Transportation Section also details existing supply and demand of Caltrain parking and provides parking projections for future demand. Ridership is projected to increase with proposed improvements of the Caltrain system. Parking projections for demand are presented in Table 3.15-7, which indicates a deficiency of 237 parking spaces at the Santa Clara Station based on projected demands for the year 2020. The matrix also reveals that a parking deficiency totaling 674 spaces is projected for the Lawrence and College Park Stations, the two stations closest to the Santa Clara Caltrain depot. The EA/EIR stipulates that the Electrification Program would increase the number of parking spaces from 9,481 to 10,697) a net increase of 939 spaces system wide. Clarification is required as to where the additional parking will be provided. The deficiency in parking spaces at the Santa Clara Station in 2020 appears to be significant and is exacerbated by parking deficiencies at the adjacent stations along the route. A discussion of the cumulative effects of localized parking deficiencies need to be examined and a determination of whether the provision of additional surface parking spaces and or new construction of parking structures is warranted."

**Response 6.6.4** Please see responses 6.5.1 and 6.6.1. The EA/EIR does not discuss station specific parking plans because ridership forecasts by station are not extremely accurate. Given the modeling imprecision, Caltrain's approach to station access is to work with local agencies in planning and implementing access improvements with the objective of meeting overall demand (i.e. the 3,258 systemwide parking spaces) rather than specific numbers of spaces at particular stations. Caltrain works with local governments in this effort similar to the recently completed San Mateo County Transit District report on rail station access. By working with local agencies it is possible to better serve the needs of individual communities in providing access to stations.

## 7.0 AIR QUALITY IMPACTS

### 7.1.1 U.S. Environmental Protection Agency, Lisa B. Hanf, Manager, Federal Activities Office, May 25, 2004

"Air Quality

"The EA provides a thorough description of regional air quality issues and conformity requirements. The proposed project is included in the 2003 Regional Transportation Improvement Program which has been demonstrated to conform to the State Implementation Plan for the Bay Area. No exceedances of state or federal ambient air quality standards are projected for the electrification of Caltrain. As of April 30, 2004, the Bay Area is a designated nonattainment area for the federal 8-hour ozone standard (Federal Register, April 30, 2004).

"Recommendations:

"Correct Page 3.23 and Table 3.3-1 to disclose that the Bay Area is designated as nonattainment for the federal 8-hour ozone standard. Include a discussion of the new 8-hour standard and how this project is affected by future requirements related to the transportation conformity role."

**Response 7.1.1** The text *in Section 3.3.1.2* of the EA/Final EIR has been changed to state that Ozone (O<sub>3</sub>) status is non-attainment for the state one-hour average as well as for the federal one-hour and eight-hour average. Table 3.3-1 has also been revised accordingly. *The 8-hour state O<sub>3</sub> standard was approved by California Air Resources Board on April 28, 2005, and became effective on May 17, 2006.* The air quality analysis demonstrates that the project is not expected to contribute to new ozone violations because operating electric locomotives will decrease the emissions of ozone precursors such as ROG and NO<sub>x</sub>.

### 7.1.2 Metropolitan Transportation Commission, Bob Bates, Caltrain Liaison, May 25, 2004.

"Please clarify the meaning of the following statement in Section 3.3.2.2, "Should ambient air quality already exceed existing standards, the BAAQMD has established threshold criteria to account for the continued degradation of regional air quality."

**Response 7.1.2** This statement has been modified in the EA/Final EIR to state that the BAAQMD has established significance threshold criteria for projects likely to increase ROG, NO<sub>x</sub>, and PM<sub>10</sub> emissions in non-attainment areas. Table 3.3-2 presents the threshold emission rates *below which* the operational emissions from a project would be considered to have an *insignificant* effect on air quality throughout the Bay Area Air Basin.

### 7.1.3 Santa Clara VTA, Roy Molseed, Sr. Environmental Planner, June 30, 2004

"Page 3-27: The EIR should identify projected future regional (and corridor-level) ambient air quality with and without electrification, and project the status of compliance with federal and state ambient air quality standards with and without electrification."

**Response 7.1.3** The EA/EIR air quality analysis has been revised to be consistent with the preferred alternative. The air quality analysis presented in EA/EIR Section 3.3.2.2 compares pollutant emissions with and without electrification. As shown, Caltrain electrification would lead to a substantial improvement in air quality over diesel operations in both *the initial year of operations* and 2035. The air quality analysis is conservative since it assumes that all the electricity generated for the Caltrain would be generated in the Bay Area. Please see response 7.1.1 and 7.1.2 for more information.

**7.1.4 American Lung Association of Santa Clara-San Benito Counties, Terry Trumball, Chapter President, May 3, 2004**

"I am writing on the behalf of the American Lung Association of Santa Clara-San Benito Counties to encourage Caltrain to move forward with proposed plans for converting your diesel trains to electric power.

"Diesel fuel is a known carcinogen and plays a role in America's dependence on foreign fuel. Studies finds that California residents on average face a one-in-1,686 risk of getting cancer from pollutants in the outdoor air, which is 593 times greater than the one-in-one- million health-protective standard established in the Clean Air Act. Eighty-eight percent of this added cancer risk is from the filthy soot released by diesel-powered trucks, buses, construction, and farm equipment.

"California has the highest emissions of diesel soot nationwide. Diesel soot has been linked to lung cancer and triggers asthma and other respiratory effects. The fine particles in diesel soot also can exacerbate existing heart and lung disease, cutting short tens of thousands of lives each year. In California, construction equipment and other non-road diesel engines released 59% of diesel emissions in 1996; the remaining 41 % of emissions were from trucks and buses.

"Electric power is environmentally safe, affordable and domestic. While some opponents of an electric Caltrain might complain that electrical wires are unsightly, the image of one of their children suffering from a diesel-induced asthma attack should cause them to cringe even more.

"Again, the ALASCSBC greatly encourages that Caltrain move forward with their removal of diesel-powered trains. A recent EPA report has once again stated the Bay Area needs to clean up its act concerning the state of our air. Clean air is needed now, for our children, for our communities, for ourselves."

**Response 7.1.4** Caltrain acknowledges the American Lung Association of Santa Clara – San Benito Counties' recognition that electrification would very substantially reduce diesel-fuel related air pollutants, corridorwide.

**7.1.5 Concerned Neighbors of Gilroy, Christopher M. Coté, Founder and Executive Director, May 4, 2004**

"Please record this e-mail message from my organization and I as support for Santa Clara County Supervisor and Caltrain Board Member Don Gage's recommendation that Caltrain electrify its equipment, and particularly that rolling stock operated through Southern Santa Clara County.

"Gilroy, Morgan Hill, and San Martin have the worst or near worst air quality currently among all cities within the nine county Bay Area Air Quality Management District, owing to prevailing north to south wind patterns and geography. Solid particulates that are carcinogenic, such as those as are emitted in large quantity by diesel locomotives, wood fireplaces, or trucks and buses, are high or very high on many days throughout the year in this region.

"A recent study published by the University of California indicates that school districts located within the most polluted regions of the state, are experiencing higher student absences, reduced corresponding state revenue reimbursements, and most importantly, negatively impacted childhood health statistics. Asthma, allergies, and other respiratory ailments are most pronounced in children in this region. Caltrain tracks lie within walking distance of nearly every school here.

"Passenger trains operated in Southern Santa Clara County that may in the future be powered by electrical energy generated with cleaner fossil fuel fired generating methods - such as natural gas, or even better yet solar, wind, or hydro power, will benefit all residents of South Santa Clara County, and particularly children. Incidental increased living standards, higher property values, and penultimately a cleaner environment are all major benefits that all those that breathe in Santa Clara Valley deserve and Caltrain can today help provide."

**Response 7.1.5** *As discussed in the responses to Comments 7.1.3 and 7.1.4, improved air quality would be a benefit of Caltrain electrification. Continuing diesel-powered service in the*

*corridor from San Jose to Gilroy would result in a small decrease in the level of improvement that otherwise would be obtained by extending electrification all the way to Gilroy.*

#### **7.1.6 League of Women Voters, Onnolee Trapp, San Carlos Hearing Speaker, May 1, 2004**

"I am representing the League of Women Voters of San Mateo County and we have about 600 members and we have a lot to say. Biggest advantages of electrification would be the reduction of energy use and auto pollution. The calculations, if accurate, are impressive compared to the no build project."

**Response 7.1.6** Improved *local and regional* air quality would be a major benefit of Caltrain electrification. Please also see the responses to Comments 7.1.3 and 7.1.4.

#### **7.1.7 Adrian Brandt, San Carlos Hearing Speaker, May 1, 2004**

"I definitely support the project, but as far as the environmental report, I didn't see any mention of interior diesel fume levels. Presently interior diesel fume levels are high, passengers are bothered by locomotive especially in cars at the front of the train, especially when train is passing through the four tunnels, in the envelope of the tunnel or tube, the air quality inside the train is really bad. Visible smoke. I already checked with BAAQMD and nobody knows who has jurisdiction—is it EPA? Air quality on certain Caltrain cars is entirely unacceptable and runs a health hazard. I would like to see that in the environmental document."

**Response 7.1.7** Please see response to *Comment 7.1.8*.

#### **7.1.8 Adrian Brandt, Friday, May 21, 2004**

"EIR Must Quantify Diesel Fume Exposure to Passengers and Crew"

"The EIR must examine and quantify the diesel fumes and particulates that Caltrain passengers riding inside the train are exposed to both with and without electrification."

"Significant (and highly variable) levels of diesel exhaust currently pollute interior air of passenger cars on trains passing through the 4 tunnels in San Francisco. It is by far the worst in tunnels 1 and 2 on southbound trains. The locomotive is on the front of the train on such trains, and is essentially filling the tunnel with thick exhaust as it is moving relatively slowly and accelerating, while pulling the passenger cars through a smoke-filled tube."

"The level of diesel exhaust intrusion varies greatly depending on how smoky the tunnel is, which depends on how smoky the particular locomotive on the train is, and how much residual smoke is lingering in the tunnel from prior trains and trains passing in the opposite direction. The severity of the car interior diesel pollution the passengers (and train crew) are exposed to appears to vary widely from car to car and locomotive to locomotive."

"The HVAC systems on the cars seem to vary in the rate at which they allow outside air (and therefore diesel exhaust) to mix with interior air. The cars may also have significant differences in how air-tight their door-seals are, accounting for variations in outside air/smoke intrusion."

"The EIR should contain a section which details the best/worst/average level of diesel exhaust exposure to passengers and crew (also in the locomotive cabs) in the current equipment (no project) versus with electrification. The health effects/differences on a range of rider types (ranging from occasional customer to long-time regulars to crew members) should be addressed and assessed based on measured vs. expected exposure to pollutants aboard the train in both a no project vs. electrification scenario."

"There could be significant worker's comp and/or litigation costs associated with crews and/or passengers claiming their respiratory health was hurt by exposure to diesel fumes riding or working aboard Caltrain. If the injured party does not recognize or blame Caltrain diesel exhaust, these costs could also be hidden or external costs related sick leave, worker's comp or other insurance claims."

**Response 7.1.8** *Neither the No Electrification nor Electrification Program alternatives would involve increased use of diesel locomotives; hence, the Air Quality impact analysis presented in EA/Draft EIR is sufficient to demonstrate the air quality improvement benefits of the Electrification Program. Please see responses to Comments 7.1.3 and 7.1.4. The projected air quality improvement from electrification is expected to result in health benefits and reductions in health care and related costs. Given the substantial reduction in air quality outside the trains, air quality inside trains would also be significantly improved. If electrification is extended southerly to Gilroy in the future, all diesel related emissions will be eliminated within the corridor. However, higher passenger loadings in Caltrain trains, even if diesel-powered, would contribute to overall improvements in local air quality.*

**7.1.9 Andrew Cigolie, May 4, 2004**

"As someone said on Saturday, the health impacts (e.g., hospitalization costs, etc.) of indirect impacts to the environment should be included. The example cited in the meeting was the diesel fumes and asthma. I am sure there are others. Electrical generation would also have impacts. My expectation is that electrification would benefit from including these costs against diesel usage."

"Include in the diesel analysis around pollution the fact that diesel locomotives are constantly being improved relative to emissions. I have read and seen references to the next generation of locomotives must meet tougher emissions standards. So, over time the diesel emissions should be going down though service additions may keep the net change at zero."

**Response 7.1.9** Please see responses to Comments 7.1.3 and 7.1.8. Regarding the changes in diesel locomotive emission factors over time, the USEPA has adopted three separate sets of emission standards: (1) Tier 0, which applies to locomotives originally manufactured from 1973 through 2001, (2) Tier 1, which applies to locomotives manufactured from 2002 through 2004, and (3) Tier 2, which applies to locomotives manufactured in 2005 and later. The USEPA has also developed fleet average emission factors for all locomotives. These emission factors were used for the air quality analysis in the EA/Final EIR. In May 2008, the USEPA approved more stringent locomotive engine emission standards. These standards require the use of advanced emission-control technologies. The availability of clean non-road diesel fuel required by the new non-road fuel standards will enable the use of these technologies on locomotive engines. USEPA estimates that oxides of nitrogen and particulate matter emissions could be reduced by 90 percent by applying such advanced technologies to diesel locomotive engines.

**7.1.10 Barry Nelson Brams, May 10, 2004**

"The one thing that I've always hated about taking Caltrain is the horrible diesel fuel smell that permeates the cars. Electrifying the trains means that not only will passengers be much more comfortable, but the entire system will greatly reduce pollution."

**Response 7.1.10** Caltrain believes that improved air quality would be a major benefit of Caltrain electrification. Please also see the responses to Comments 7.1.3 and 7.1.4.

**7.1.11 Irvin Dawid, May 1, 2004**

"Chapter 3: Environmental setting and consequences, pg 3-29.

"3.3.2.3 Impacts...

"Corridorwide Air Pollutant Emissions

"States that NOx emissions do not decrease with electrification.

"Please clarify."

#### **7.1.12 Irvin Dawid, San Carlos Hearing Speaker, May 1, 2004**

“Thank you for holding this hearing on a Saturday—when Caltrain’s not running, but SamTrans buses are. I’m speaking right now on behalf of the Sierra Club and I also serve but I’m not speaking on behalf of, the Advisory Council to BAAQMD. First I had a question for Pat, she indicated that the one pollutant that didn’t see great decreases was nitric oxide and I wanted to see something to address that because I would think that would be one of the biggest decreases with electrification. In terms of the Sierra Club’s perspective—we view this as actually our highest transportation priority—the biggest benefit to this project is not actually for people that are using the train but one of the goals that was mentioned at the beginning of the program and that is to be a good neighbor. In many ways, Caltrain is like having a neighbor who’s got a smoking 1970s jalopy next door. And you’re this person’s neighbor and you’re saying, ‘When is that person getting a modern hybrid?’ They don’t have to get a zero emissions vehicle; you’ll settle for a hybrid. The idea of electrifying Caltrain, it is perhaps suitable that we’re holding this meeting the same year that the New York subway is undergoing its centennial. That’s an electrified system even though the first subway in the world was not electrified. So, it is high time we brought this train even into 20<sup>th</sup> century, though obviously we are past that now. I’ll end there; we’re hoping to put in our comments, but this is an overdue project.”

**Response to Comments 7.1.11 & 7.1.12** NO<sub>x</sub> emissions would be substantially reduced with electrification. As Table 3.3-4, *Emissions Comparison Summary (Five-Car Trains)* in the EA/Final EIR shows, there would be a reduction of 1,030 tons of NO<sub>x</sub> per year for 2035 electrified operations compared with current diesel operations (including the emissions resulting from generating the electricity to power the trains).

#### **7.1.13 Mark Duncan, San Carlos Hearing Speaker, May 1, 2004**

“...In the EIR you need to quantify the precise amount of pollution that is being emitted. If you reported the quantities that are being emitted, the actual level of nitrous oxides, and considered the overall effect on the Bay Area Air Basin, I believe it is quite significant and that would make a better case for electrification.”

**Response 7.1.13** Tables 3.3-3 and 3.3-4 in the EA/Draft EIR do present quantification of the amounts of each criteria pollutant that would be emitted under continued diesel operations compared with electrification for the opening year and the horizon year 2035. These results have been updated for the opening year consistent with the recently released Caltrain Strategic Plan; see the revised EA/Final EIR.

#### **7.1.14 Jim Kelly, San Carlos Hearing Speaker, May 1, 2004**

“...The main point is the health benefits of electrification. Please make no mistake, the motivation to move in that direction is much stronger than some people realize. We have on going in the U.S. and in California an epidemic of asthma. Two main causes of asthma are diesel fumes and automotive pollution, both of which would be reduced in this project. Because I am actively going to schools and talking to kids about health issues, in an average class of 30 kids, I usually ask how many of you are asthmatic and I usually get not less than five hands raised. When you consider the disease continues on the increase, so if you are weighing the pluses and minuses of the cost of diesel propulsion, that has a health cost. The cost of maintaining diesel propulsion—it’s a scary number that the disease continues on the increase. So if you are weighing the pluses and minuses, please understand the cost of maintaining as a result of those fumes.”

**Response 7.1.14** Caltrain anticipates that the reductions in air pollutant emissions from electrification would have health benefits, not only for Caltrain riders, but for residents and workers throughout the Caltrain corridor *from San Francisco to San Jose*.



**7.1.15 Judith M. Oranasu, Ph.D., May 25, 2004**

“While we are promised that electrification will improve air quality along the train corridor, in fact producing the electricity to run the trains will negatively affect air quality in other locations. This is simply a matter of shifting around the dirty air.”

**Response 7.1.15** The air quality analysis included emissions from power plants generating the electricity used to power trains. This analysis found that overall air quality was improved even *including* emissions from power plants. This is not unexpected since it is easier to control emissions from stationary sources (electric power plants) than moving sources like diesel locomotives. JPB has identified EMUs, which are more energy-efficient than diesel locomotives hauling trailer cars, as the preferred rolling stock option for the Electrification Program. This will reduce air emissions relative to the other equipment types evaluated. For more information please see EA/EIR Section 3.3, Air Quality, and Section 3.10, Mineral and Energy Resources.

## 8.0 BIOLOGICAL RESOURCES

### 8.1.1 U.S. Environmental Protection Agency, Lisa B. Hanf, Manager, Federal Activities Office, May 25, 2004

“...Water Resources

“The EA states that all potential jurisdictional Waters of the United States (waters) in the project area that parallel the existing tracks occur outside the project right-of-way and would not be affected by project construction (p. 3-36). The EA also states that the line of poles for the overhead electrification contact system can be constructed without encroaching into waters that lie longitudinally along the edge of the Caltrain right-of-way. The right-of-way for the proposed project is adjacent to both Brisbane Lagoon and the San Francisco Bay and one traction facility is proposed to be constructed adjacent to Los Gatos Creek.

“Recommendations:

“Disclose the distance between the project right-of-way and nearby water features, such as Brisbane Lagoon, San Francisco Bay, and Los Gatos Creek), and identify whether the project will have indirect and cumulative impacts to these features during project construction and operation. Clarify the methods available to avoid waters including flexibility regarding the placement of electrification infrastructure.”

“Invasive Species

“The proposed project may include impacts to vegetation within the existing right-of-way and mitigation is proposed as a result of ground disturbance and tree removal. Executive Order 13112 on Invasive Species calls for the restoration of native plant and tree species.

“Recommendation:

To the extent that this project will entail new landscaping and tree replacement, the mitigation measures should describe how the project will meet the requirements of Executive Order 13112 by using native species. Replacement of trees and revegetation should be coordinated with appropriate city and county urban foresters and native species should be utilized where feasible.”

**Response 8.1.1 Water Resources:** As stated in EA/EIR Section 3.4.2.2 – Jurisdictional Waters, detailed field surveys and measurements were conducted and reported in the Natural Environment Study to confirm that the line of OCS poles can be constructed without encroaching into wetlands/waters that lie parallel to the edge of the Caltrain right-of-way. All of the pole foundations would be constructed within existing right-of-way. Where the project alignment is adjacent to water resources or riparian habitat, and in areas where the water table is known to be high, impacts *could* be minimized *through use of alternative construction techniques* (e.g., vibrating a steel casing into place for the pole foundation and excavating the soil within the casing).

**Invasive Species:** Section 3.1.3, Mitigation (for Visual/Aesthetic impacts) has been changed in the EA/Final EIR to include JPB coordination with the appropriate city and county urban foresters and consideration of restoration *using* native plant and tree species wherever practicable.

### 8.1.2 City of Santa Clara, Geoffrey Goodfellow, Director Planning and Inspections, May 25, 2004

“...A discussion of biological resources is presented in Section 3.4 of the EA/EIR that identifies a limited number of special-status species that have a moderate potential to occur within the rail corridor. This list does not include the burrowing owl, but is referenced in Enclosure A of Appendix C in the EA/EIR. As stated in the document: “Pre-construction surveys are recommended to ensure that there is no incidental take of species during construction (see Section 3.4.3, Mitigation).” The mitigation measures are identified in Section 4.2.3 but are limited to the California red-legged frog,

San Francisco garter snake, Monarch butterfly and nesting swallows. This list should be expanded to include burrowing owls, as grassy areas adjacent to the rail line may be suitable for nesting and foraging of this special status species and the language should be altered to state that a pre-construction survey will be “required” as a mitigation measure of project construction.”

**Response 8.1.2** *For the project there is only one location, in the PS-7 vicinity, that was preliminarily identified during a February 2008 survey as potential burrowing owl habitat. During a follow-up site visit on April 28, 2008, the biologist concluded that “there is little or no potential for the western burrowing owl to occur at the PS-7 site.” This conclusion was reached based upon lack of breeding or foraging habitat. Hence, pre-construction surveys for burrowing owl have not been added to the list of actions in Section 4.2.3.2, [Biological Resources] Preventive Measures in the construction impacts chapter of the EA/Final EIR.*

## 9.0 CULTURAL AND HISTORIC RESOURCES

### 9.1.1 Town of Atherton, Kathy McKeithen, Mayor, May 20, 2004

"The addition of poles within 40 feet of the historic Atherton train station, and multiple wires within a few feet of the station would have a direct and adverse impact on the historic train station's site. Note also that 1913 is when the station was restored, but the original station was constructed in 1866. Please see the attached 1913 picture of the Atherton station.

The test is not whether the structure itself must be modified, but whether the site and context of the station is modified. The test is also not whether it is adverse, but whether the adverse impact is significant. This impact needs to be appropriately addressed, with its significance determined in accordance with standard historical guidelines."

**Response 9.1.1** Potential impacts of the OCS infrastructure on 25 historic resources in the Caltrain corridor are presented in Section 3.5 of the EA/EIR. Particular attention was paid to the placement of facilities in the vicinity of historic resources, and coordination was conducted with the South Bay Historic Railroad Society, the covenant holder for the historic Caltrain stations, in developing the concepts for these facilities. A Finding of Effect report was prepared consistent with Advisory Council on Historic Preservation procedures and the requirements of Section 106 of the Historic Preservation Act. This report was submitted to the State Historic Preservation Officer, who concurred in letters dated December 9, 2002, and July 15, 2003, that the project would have no adverse effect on any of the 24 historic resources *identified at that time*. *Subsequently, an Addendum Finding of Effect Report was prepared to address project refinements and changes, specifically the reduced length of the project (San Francisco to San Jose), locations of traction power facility stations, and associated area of potential effect (APE) revisions.* The SHPO's letters are provided in Appendix C of the environmental document.

Regarding the 1913 construction date of the station as listed in Table 3.5-3 in the EA/EIR, all of the previous evaluations (and the research conducted for the present document) have reported that this building was built in 1913. It is carried in the Office of Historic Preservation Historic Properties Data File for San Mateo County (printed Jan 2003) as constructed in 1913, and the architectural style supports an early twentieth century date. There was likely a station of some kind at or near this location from the 1860s on because of the large "summer estate" holdings in the area. A great number of stations on the Caltrain line, and on railroads throughout California, were often "modernized," remodeled, or replaced outright as the communities around them grew and architectural tastes changed. From at least the 1870s through early 1920, the station was named Fair Oaks, and it was officially named Atherton in March 1920.

*The Addendum Finding of Effect for this station concludes that pole placement will not require physical changes to the historic property, nor to its use, nor to its character-defining features [36CFR800.5(a)(2)(i-iv)], nor will the pole placement diminish the integrity of the property's significant historic features [36CFR800.5(a)(2)(v)]. Installation of OCS equipment at this location will not adversely affect the attributes that made the Atherton Station potentially eligible for the National Register as a contributor to a historic district, if one were established.*

### 9.1.2 City of Santa Clara, Geoffrey Goodfellow, Director Planning and Inspections, May 25, 2004

"...Section 3.5 of the EA/EIR focuses on cultural resources and identifies prehistoric and historic archeological sites in or potentially in the project area. The City of Santa Clara has an Archeological Monitoring and Treatment Plan for construction related activities within archeological, cultural and historical sensitive areas. In addition to the mitigation measures posed in the Cultural Resources section of the EA/EIR, the document should state that the project shall comply with adopted City Archeological Monitoring and Treatment Plan of archeological, cultural and historic resources. A copy of this document is attached."

**Response 9.1.2** The JPB would comply with the City of Santa Clara's archeological mitigation measures and guidelines for any construction activities within Santa Clara's jurisdiction. Text to this effect has been added to Section 4.2.4.1, in the EA/Final EIR.

**9.1.3 Richard Mlynarik, May 24, 2004**

"...3-46 section 3.5.4.2: Why wasn't this structural analysis and crown notching combined into the recently-awarded 2004 tunnel rehabilitation contract? Caltrain: where our motto is 'If it's worth doing once, it's worth doing three times'"

**Response 9.1.3** Comment noted.

## **10.0 ELECTROMAGNETIC FIELD RADIATION (EMF) / ELECTROMAGNETIC INTERFERENCE (EMI)**

### **10.1.1 BART, Mr. Roger Avery, Engineering Department, May 25, 2004**

"The report does not address the Electromagnetic Interference (EMI) from the Catenary System to BART train control and non-fiber communications circuits or to PacBell and possibly other utility company communications lines. This EMI will cause noise between conductors and a longitudinal voltage to ground. The Auto-Transformer Traction Power Feeding System does mitigate some of the EMI but the actual amount is totally dependant on the spacing between the Auto-Transformers and the location of the train or the fault. The longitudinal induced voltages may become dangerously high (perhaps as much as 5000 volts per mile if Auto-Transformers are 1 mile apart as is typical) in the event of a catenary fault. The costs of additional mitigation to eliminate the affects on BART Train Operations may be substantial as may be PacBell's and other's wire phone lines.

"The report also does not address the effects and mitigation of any corona discharge from the catenary system to radio and television receivers in the area. This should be negligible unless there is any damage during construction to the high voltage conductors or hardware."

**Response 10.1.1** Please refer to Responses to 2.3.9 and 2.3.10. The Auto-Transformer system was chosen over the direct Center Feed system in large part because of the success of similar installed and operating systems in the United States, Europe and other parts of the World in minimizing the effects of both EMI and EMF. The spacing of the Paralleling and Switching Stations, and hence of the Auto-transformers, *is about five miles*, as shown in Figures 2.3-5 through 2.3-15 of the document, not 1 mile as is stated in the comment, which is very untypical of systems that have been designed and built in Europe. The recently completed Amtrak Northeast Corridor Electrification Project has the Auto-Transformers spaced at 6 to 8 miles apart. During the P.E. design, the assessment of potential longitudinal induced voltages showed that they should not be greater than occur with typical utility distribution systems of comparable voltage. In this respect, the Northeast Corridor Electrification Project was designed and tested to levels of less than 20 volts during actual trainload, and significantly less than the 430-volt design recommendation during fault conditions, which is considerably lower than the 5000 volts per mile suggested by the commenter. During final design, more detailed analyses would be undertaken to determine the specific levels of any voltages that could be induced onto paralleling longitudinal conductors and, if significant voltages were to be identified, mitigation measures would be developed in accordance with the relevant industry accepted IEEE and/or MIL standards.

Corona discharge is more frequently a problem associated with high voltage transmission systems, rather than with medium voltage 25 kV OCS systems. However, the final design would utilize proven technologies for catenary system components, and the *technical* specifications would be written to assure that damage during construction to the conductors or hardware would be minimized to the greatest extent practicable.

### **10.1.2 Town of Atherton, Kathy McKeithen, Mayor, May 20, 2004**

"Potential Interference with Resident's Electronics

"Section 3.17.4 on Electromagnetic Interference (EMI) alludes to the potential for interference with "other electromagnetic systems." It is unclear if these other systems include the various systems in nearby residences, businesses and public offices such as medical equipment, computers, telephone, cellular telephones, television, radios, etc.

"The DEA/EIR needs to discuss the potential for EMI impacts to adjacent properties. It is especially critical that potential EMI impacts to sensitive installations near the corridor be identified and thoroughly discussed.

"The same section states that specialized components may be required for certain systems, but does not call for the installation of these components as mitigation for the EMI impacts. This section is insufficient and needs to be expanded to discuss: a) what features will be incorporated into the electrification system to avoid EMI impacts; and b) what mitigation will be included with the project for EMI impacts to nearby properties and sensitive installations."

**Response 10.1.2** As noted in EA/EIR Section 3.17.1, both electric field strength and magnetic field strength decrease rapidly with increasing distance from the source – the OCS conductors. In addition, the Auto-Transformer feed system results in reduced EMI impacts by comparison with other electrification system designs, and this was one of the primary reasons behind its selection. However, *despite the extremely low potential for adverse exposure to EMI effects, this subject will be further assessed on a site-specific basis during final design.* Proven design standards have been developed and would be followed to mitigate any identified effects. For instance, under the recently installed 25 kV electrification system between New Haven, Connecticut and Boston, Massachusetts, counter poise ground wires were installed in some locations, and additional bonding between the aerial ground conductors was used as well. These mitigation features would be developed during final design, in accordance with the published standards.

#### **10.1.3 City of Brisbane, Michael Barnes, Mayor, May 12, 2004**

"We are also concerned about the level of exposure to EMF radiation that the passengers would experience, notwithstanding the reality that the duration of exposure would be limited to travel time. We urge you to do everything feasible to mitigate this exposure."

**Response 10.1.3** The electrification system proposed for Caltrain is virtually identical to that used on the Amtrak Northeast Corridor between New Haven, CT and Boston, MA, and to systems installed in many other locations throughout the world. Extensive testing was done by the Federal Railroad Administration (FRA) on the new 150-mile electrification system in the Northeast, including measuring the levels of exposure, and no adverse effects on passengers have been reported from that system. The new electric multiple unit (EMU) cars would be designed to minimize exposure levels for the Caltrain passengers.

As reported in Section 3.17.3.3, EMF Associated with Electrified Caltrain Operations, in the EA/EIR, measured average EMF field strengths on board Caltrain vehicles would be *far below established limits, either for occupational exposure or the general public. Exposure values, including in the interior of train passenger compartments, are estimated to be no more than typical levels of exposure encountered in proximity to household appliances.*

#### **10.1.4 City of Sunnyvale, John Howe, Mayor, May 12, 2004**

"5. Electromagnetic Interference (EMI): This aspect is discussed in Section 3.17.4. It will probably not be a problem for most of the neighboring land uses in Sunnyvale. However, due to the prevalence of high-tech and special business activities in Silicon Valley, the FEIR shall include, as mitigation, notification and consultation in advance with local neighboring businesses and others at interest about the EMI issues related to the project."

**Response 10.1.4** Comment noted. Please refer to Responses to 10.1.1 and 10.1.2 with regard to the design steps that would be followed to mitigate any identified EMI/EMF issues.

#### **10.1.5 Palo Alto Medical Foundation, Melissa Stai, Manager, Support Services, May 10, 2004**

"The Palo Alto Medical Foundation is greatly concerned with the possibility of electromagnetic interference and its impact on various medical technologies, including Magnetic Resonance Imaging and Telemetry.

"We expect the Environmental Impact Report to consider these potentially life threatening impacts carefully."

**Response 10.1.5** Please refer to Response to 10.1.4. During final design, the JPB would coordinate with the Palo Alto Medical Foundation to determine whether the facility would be susceptible to EMI/EMF effects. If negative effects were to be identified, specific mitigation measures would be developed to address any significant effects. However, it must be stressed that the effects of EMI/EMF diminish rapidly with distance from the conductors *and therefore it is highly unlikely that adverse effects would be expected.*



## **11.0 ENERGY IMPACTS**

### **11.1.1 Metropolitan Transportation Commission, Bob Bates, Caltrain Liaison, May 25, 2004**

"Please provide supporting information to verify the statement in Section 3.3.2.1 that 90 percent of the electrical power consumed in the JPB Corridor is imported."

**Response 11.1.1** Sentence modified to state that the Bay Area is a net importer of energy based on consultations from BAAQMD.

### **11.1.2 City of Mountain View, Matt Pear, Mayor, May 18, 2004**

"Energy Production and Capacity

"Sufficient energy production and transmission capability has been an issue in California for several years. The EIR states energy production will be sufficient to support operation of an electrified Caltrain system. However, the EIR should provide data to substantiate this claim and should include a discussion about potential impacts if sufficient power generation or transmission capacity cannot meet the needs of the system."

**Response 11.1.2** It is not possible to separate Caltrain's demand for electricity from other expected increases in demand created by population and economic growth in the Bay Area. As part of the process of developing detailed plans for electrification Caltrain would approach power suppliers much like any other major user to discuss power requirements. The suppliers would make proposals to Caltrain for providing electricity; part of the analysis completed by these companies would be determining how and where the electricity would be produced and how it would be transported to Caltrain. Should it be necessary to build new power plants or distribution facilities these would be planned by the power production and distribution companies, not by Caltrain. Any environmental analysis done of these new facilities would be completed by these companies since Caltrain would be only one of many customers for the new services.

### **11.1.3 Bay Rail Alliance, Margaret Okuzumi, May 25, 2004**

Fuel pricing and savings. Please include a discussion of the expected future volatility of the price of diesel fuel vs. electricity, and whether electrification has the potential to provide large operational cost savings as a result."

**Response 11.1.3** Increasing costs for diesel fuel *have* increased the cost effectiveness of electrification. EA/EIR Section 2.3.3.3 has been revised to present more current data on operating cost reductions due to the rising cost of diesel.

### **11.1.4 Lorelei Homeowners Association, Henry L. Riggs, May 3, 2004**

"It seems like a great idea to electrify the corridor. I'm concerned, however, about two aspects of impact on our environment. [See Comment 2.3.5 for first.]

"...Second, the electrical power that will be added to the current loads has to come from increased capacity. Currently, PG&E and others exhaust all wind, solar and hydro power first, then gas and oil and coal. Will much of this added load be coal generated?"

**Response 11.1.4** Electricity for Caltrain is likely to be generated using a variety of different systems at different times. Newer power plants are generally more efficient and less polluting than older plants, and many energy suppliers are investing in renewable energy sources. Since the electrical power generation analysis reported in EA/EIR Section 3.3.2, Air Quality, assumed that the electric energy would be generated by a typical mix of facilities, it is likely that Caltrain electrification will provide better than expected improvement in corridor environmental quality as power generation facilities improve.

#### **11.1.5 Roger Baird, Sunnyvale Hearing Speaker, April 24, 2004**

"Just a couple of quick questions about the actual megawatt load that you're requiring PGE to deliver?"

**Response 11.1.5** During the Preliminary Engineering Phase, a series of traction power load flow simulations were conducted to estimate the power demand resulting from the electric operations. The results indicate that at the start of service in 2015, the peak hour average demand at the South San Francisco Substation (TPS-1) is 19MVA (MW) and at the San Jose Substation (TPS-2) is 16MVA. However, the traction electrification system is designed to accommodate the ultimate operating service which produces a peak hour average demand on the two transformers of 45 MVA and 18MVA at TPS-1 and 45 MVA and 3MVA at TPS-2. Thus the total power peak hour demand is estimated to be a maximum of 110MVA (MW).

#### **11.1.6 Philip Hutcherson, April 21, 2004**

"An idea: Add solar panels along the Caltrain right of way to offset the added electrical requirements of electric trains. Yes very expensive but payback might be in 10 years or so especially if fuel prices continue to rise. It also makes a strong efficiency and environmental statement."

**Response 11.1.6** Comment noted. This is a good idea that Caltrain could consider as part of long-range planning for the right-of-way (similar to leasing space for fiber-optic cables). Given the need for increasing the number of tracks along most of Caltrain's right-of-way, it is likely that Caltrain will add tracks and platforms prior to implementing other infrastructure within the right-of-way.

#### **11.1.7 Mark Duncan, San Carlos Hearing Speaker, May 1, 2004**

"Currently, Caltrain uses 71,000 gallons of diesel fuel every month and gets half a mile per gallon."

**Response 11.1.7** Comment noted.

#### **11.1.8 Gail Ghose, San Carlos Hearing Speaker, May 1, 2004**

"...And the second question is, how does additional use of electricity impact the power plants in California, would this require an extra power plant, for example, and would that be built?"

**Response 11.1.8** Please see responses 11.1.2 and 11.1.4.

#### **11.1.9 Paul Lund, San Carlos Hearing Speaker, May 1, 2004**

"...My second point is the running out of petroleum,. there are some misconceptions there. When petroleum supplies come up short, it's not simply a matter of running out, of things going to run dry. It's a matter of costs going up greatly to extract the petroleum. Shell has recently had problems with overstating the reserves. It's probably a systemic problem throughout; all the petroleum reserves are overstated. The cost of extracting oil goes up as the supply diminishes. So, we aren't going to suddenly run out, but the costs are going to go up very dramatically and the cost of anything that runs on gasoline or diesel is going to go up dramatically. Obviously you will still need to get the energy somewhere, but with electrification, you have more options."

**Response 11.1.9** Comment noted. Oil prices *have been* increasing as supply decreases, and as oil prices increase, the operating cost benefits of Caltrain electrification will increase.

#### **11.1.10 Robert Neff, April 29, 2004**

"I think the energy savings due to electrification should have higher prominence in the project summary.

"I read through the summary of the EIR and was surprised that there was little mention of the reduction of energy use when going to electrification. I'm glad to see that was considered in more

detail in Chapter 3. I think the fact that switching to electricity reduces total energy consumption by almost 40% is an important detail and has benefits as an ongoing reduction in CO2 emissions. The energy savings also benefit Caltrain costs in the long term (though probably not enough to compensate for the construction costs by themselves). (See page 3.86).

"I'm surprised that option 2 (Electrification with EMUs) is not significantly more efficient than option 1 (locomotives), because I was expecting the EMU option to result in a much lighter weight for the train, and therefore less energy use. Also EMUs enable much shorter trains during non-peak periods, which could significantly reduce energy use as well – Not every train has to be 4-5 cars long, and the incremental cost of more frequent, shorter trains would be smaller."

**Response 11.1.10** Reducing fuel use and costs would be one of the primary benefits of the Electrification Program. As reported in the EA/EIR, both in Summary Table S-1, Summary of Long-Term Impacts and Proposed Mitigation Measures, and in Section 3.10, Mineral and Energy Resources, Table 3.10-1, Annual Traction Power Energy Use for the No-Electrification and Electrification Alternatives, the Electrification Program Alternative would consume less than 30 percent of the amount of energy required for the No-Electrification Alternative. Diesel fuel use would decrease substantially with electrification while electricity use would increase substantially—but not proportionately in terms of energy content—because using electrical energy from centralized power plants is more efficient than using conventional diesel-electric locomotives. Electric energy generation is expected to be adequate to meet Caltrain's future electricity demand.

In addition to reducing energy use, electrification would contribute to reductions in energy costs. As reported in the EA/Final EIR, Section 2.3.3.3, *Table 2.3-9 Incremental Operating and Maintenance Costs for Electrification, a substantial decrease in energy costs is projected by year 2035. While projecting future electricity and diesel prices is very uncertain, current trends would project diesel fuel increases outpacing electricity price increases.*

EMUs are most the energy-efficient among the rolling stock options considered. This is a major reason for their having been identified as the preferred rolling stock option for the preferred Electrification Program Alternative in the EA/Final EIR. EMUs would consume about 6 percent less kilowatt hours as electric locomotives hauling trailer cars. This translates into an approximately \$500,000 annual energy cost savings over the electric locomotive hauled rolling stock options.

Finally, another important benefit of electrification is the ability to run longer train consists without degrading speeds. This would enable Caltrain to serve more peak-period passengers without commensurate increases in operating and maintenance costs. This is much more cost effective than running shorter and more frequent trains, which would increase labor and other operating costs.

#### **11.1.11 Nick Perry, May 1, 2004**

"I am in full support of the electrification of Caltrain. An electric train line will benefit all individuals along the Caltrain peninsula corridor. I heard petroleum might run out in 10 years or so. We all will have to depend on electric trains for long distance travel in the future. Caltrain has the potential to become an electric rail line. This plan will also lay the foundation for California high-speed rail in the future."

**Response 11.1.11** Comment noted.

#### **11.1.12 Jim Stallman, April 24, 2004**

"Make sure that regenerative braking coupled with energy efficiency comparison is made between electrification and the no-build alternative."

**Response 11.1.12** The energy savings that can result from regenerative braking are entirely dependent upon how receptive the system is when a particular train is decelerating and creating power. In other words, energy savings can be achieved only if there is another train in the same electrical section that is demanding power through accelerating or cruising. That receptivity varies throughout the day based on the number of trains on the system at any given moment. The

Preliminary Engineering traction power system load flow simulations were run to assess the prospective maximum power demands to define the design basis, not to investigate prospective energy management techniques, so regenerative braking was not incorporated. Final vehicle design would require the capability for regenerative braking. As noted, savings vary enormously, but have been shown to be as high as 10% in very receptive systems. One advantage of the ATF power supply system is that the electrical sections are longer than with the DCF system, so there is higher probability of receptivity. This aspect would be investigated in more detail during Final Design.

## 12.0 FISCAL/ECONOMIC IMPACTS

### 12.1.1 Metropolitan Transportation Commission, Bob Bates, Caltrain Liaison, May 25, 2004

"In Section 3.1, Land Use and Planning, there is no mention of opportunities for development at or near Caltrain stations. While this project may have negative impacts on some properties, it also presents opportunities at the twenty-six of Caltrain's stations affected by this project. MTC, through its transit expansion policy and program as well as the recently adopted 'Transportation and Land Use Platform' clarifies that new public transit projects will be evaluated in part based on local supportive land use policies that can be proven to increase ridership and thus maximize the cost-effectiveness of the project. Specifically, it states the following goals:

- "Promote development of land uses adjacent to major transit extensions, to support ridership markets that will make these investments economically feasible.
- "Condition the award of regional discretionary funds under MTC's control for Resolution 3434 expansion projects, on the demonstration by local government that plans are in place supporting some level of increased housing/employment/mixed use density around transit stations/transfer centers."

"In light of these adopted regional policies, please expand upon the land use chapter when you produce the FEIS with quantification of employment and residential development densities around stations and opportunities for additional development."

**Response 12.1.1** The proposed Caltrain Electrification Program is not a transit-expansion project. It is the JPB's understanding that MTC's recently adopted Transportation and Land Use Platform applies to transit-expansion projects only. Nonetheless, a new section (Section 3.9.1.4) has been added to the EA/ Final EIR that discusses the MTC's program and the possible contribution of the Caltrain Electrification Program to its success.

Although the proposed Caltrain Electrification Program does not entail an expansion in Caltrain service, the program would create a more conducive environment for development of land at or near Caltrain stations, by reducing noise and improving air quality. Caltrain plans to work closely with adjoining communities as part of a partnership in improving coordination of land use and transportation planning, as called for in Caltrain's recently adopted Strategic Plan, to increase Caltrain ridership.

The two stations that stand out for their relatively large amount of planned new development are the San Francisco 4th and King station and the San Jose Diridon station. At 4th and King, much of this new growth would result from the Mission Bay redevelopment project. The bulk of the residential development is planned nearer the station, while most of the development of office and research space is planned to occur beyond the half-mile radius of the station. At Diridon, both residential and office development are planned within the vicinity of the station. Some residential development has already begun to occur, but the growth in offices is likely to be slow until the Bay Area economy improves.

Of the other station areas that currently have relatively low population levels, those slated for the most future growth in residential units are Millbrae (due to planned development in both Millbrae and Burlingame), Palo Alto, Lawrence (in Sunnyvale) and Santa Clara.

Of the station areas that already have relatively moderate to high population levels, those that are slated for high growth in residential units are Redwood City, Sunnyvale, Hayward Park, Tamien (in San Jose) and Hillsdale. The City of San Mateo has gone through a lengthy planning process concerning the redevelopment of the Hillsdale and Hayward Park stations. The City is also working with the Bay Meadows Land Company to redevelop the Bay Meadows racetrack into a high-density, mixed-use community on the east side of the Hillsdale Station.

Although many station areas will see fairly substantial increases in population in the coming years, the picture is very different when it comes to job growth. Of the station areas that have relatively low numbers of jobs, only Hillsdale and Millbrae would have any sizable increase in office development, according to current plans. While the immediate Millbrae station area would have an increase in its number of offices, a large amount of office and medical office space would be lost farther from the station due to redevelopment in the northern part of Burlingame. However, due to the relative lack of a pedestrian-supportive environment between the Caltrain station and the existing offices in North Burlingame, it appears that few trips to these offices are currently made by Caltrain. The new offices would be much closer to the station and much more easily accessible by foot from the station.

Of the station areas that already have relatively moderate to high numbers of jobs, 4th and King, Sunnyvale and San Jose are targeted for substantial increases in office square footage. In addition, the Hayward Park and Palo Alto station areas would have more modest increases in office square footage.

It is important to note that, while demand for residential development is *relatively* stable due to a regional housing shortage, the demand for office development is much more susceptible to economic cycles. The planned increases in office development described above may therefore take many years to materialize.

## **13.0 HAZARDOUS WASTES / HAZARDOUS MATERIALS**

### **13.1.1 California Department of Toxic Substances Control, Barbara J. Cook, P.E., Chief, Northern California–Coastal Cleanup, April 9, 2004**

“Thank you for the opportunity to comment on the Environmental Assessment/Draft Environmental Impact Report (EA/DEIR) for the Caltrain Electrification program [SCH not provided]. As you may be aware, the California Department of Toxic Substances Control (DTSC) oversees the cleanup of sites where hazardous substances have been released pursuant to the California Health and Safety Code, Division 20, Chapter 6.8. As a Responsible Agency, DTSC is submitting comments to ensure that the environmental documentation prepared for this project to address the California Environmental Quality Act (CEQA) adequately addresses any required remediation activities which may be required to address any hazardous substances release.

“DTSC has reviewed the EA/DEIR and has the following comments:

“1. Table 1.5-1 (Permits and Approval Anticipated to be Required): This table indicates that several permits and approvals will be required from various agencies as part of the construction project. However, the table does not state what agency(ies) will be involved in approving activities associated with the remediation and management of hazardous substances that are anticipated to be present along the project corridor.

“...3. Page 3-67, Section 3.7.4: This section contains mitigation measures for sites identified as ATF-1A and ATF-2A. The mitigation measures are described as collecting samples from soil piles to determine the contents and appropriate disposal options from site ATF-1A, and to identify the contents of drums and stored materials at site ATF-2A. DTSC strongly recommends that the sampling be conducted immediately so that the soil and drum contents may be characterized. We are also requesting that the sampling information be forwarded to DTSC as well as the site address, name of generator, and name of property owner.

“4. Page 3-69, second bullet: DTSC recommends that the term “hazardous wastes” be replaced with the term “hazardous substances” in this section and other appropriate sections in this document. The term hazardous substances would include contaminants that may not be a hazardous waste, but may be of concern for human and environmental health and safety. DTSC also suggests that the Risk Assessment document be limited to an evaluation of the potential risks posed by the chemicals present at the site. The appropriate remedial measures, remediation goals, and implementation methods should be included in a remedial decision document. This document should then be reviewed and approved by the appropriate regulatory agency. The remedial measures also need to be addressed as part of this document. For example, if the remediation activities include the need for soil excavation, the CEQA document should include: (1) an assessment of air impacts and health impacts associated with the excavation activities; (2) identification of any applicable local standards which may be exceeded by the excavation activities, including dust levels and noise; (3) transportation impacts from the removal or remedial activities; and (4) risk of upset should be there an accident at the Site. Either these measures should be incorporated into this document, or a statement added that a supplemental EIR or other CEQA document will be prepared.

“5. Page 4-11, Section 4.2.5.2, Mitigation, Hazardous Wastes: Paragraph 3 and 5 of this section states that contaminated soil can be excavated and stockpiled at a centralized location, and subsequently sampled and analyzed for disposal profiling. If the soil is found to be a hazardous waste, and the stockpile is not located at the generation point, the generator of the waste may be in violation of hazardous waste transportation and storage requirements. Prior to implementing this mitigation measure, DTSC's Hazardous Waste Management Program should be contacted to determine whether a hazardous waste permit or variance from permitting requirements is required. In addition, a document such as a Soil Management Plan that describes the soil management measures (e.g., excavation, stockpiling, dust control, etc.) that will be used on the project will need to be prepared, reviewed and approved by an appropriate regulatory agency.

"6. Page 4-12: Workers that may come into contact with hazardous substances at the site as well as the Health and Safety Plan are required to meet the provisions of California Code of Regulations, Title 22, section 5192.

"DTSC can assist your agency in overseeing characterization and cleanup activities through our Voluntary Cleanup Program. A fact sheet describing this program is enclosed. We are aware that projects such as this one are typically on a compressed schedule, and in an effort to use the available review time efficiently, we request that DTSC be included in any meetings where issues relevant to our statutory authority are discussed.

"Please contact Lynn Nakashima of my staff at (510) 540-3830 if you have any questions or would like to schedule a meeting. Thank you in advance for your cooperation in this matter."

**Response 13.1.1** Table 3.7-1, Known Hazardous Wastes Sites with Potential to Affect Proposed Traction Power Substation Sites, reports the status of each site identified during the 2007 and 2008 ISAs. Nearly all were in characterization, remediation, or post-remedial monitoring at that time. As Section 3.7.3, [Hazardous Wastes] Impacts, states, while low-level contamination from aerially-deposited contaminants or pesticides/herbicides may require worker health and safety management, no remedial action or project modifications are anticipated. *Preparation, review and implementation of the worker health and safety plan will be handled in accordance with all federal and state regulatory requirements.* This review has been added to Table 1.5-1, Permits and Approvals Anticipated to be Required.

*Sites ATF-1A and ATF-2A are no longer a part of the project. New sites have been selected for paralleling stations PS-4 and PS-5. Neither of the cases listed in Table 3.7-1 would directly affect either of these proposed station sites.*

If the Electrification Program is adopted, JPB would engage a qualified professional to prepare a Phase II site investigation and conduct *focused* soils testing, identify the contents of waste drums, and conduct surface sampling *where appropriate*. JPB would begin such testing as soon as practicable following adoption of the project. Findings would be provided to DTSC for coordination of any required pre-disposal actions. It is not anticipated that additional remedial actions would be required to address the types of low-level contamination that may be present along the railroad corridor. The Risk Assessment is recommended to ensure that no additional risks to worker or public health and safety would result from construction of the project. If such risks are identified, JPB would address the risk in accordance with federal, state, and local regulations; this would include consultation with DTSC.

Construction of the OCS poles and wires is not expected to require extensive earthwork that would result in air impacts or health effects or exceed local standards. As stated in Section 4.1.1.1, Overhead Contact System Installation, spoils resulting from the excavations for OCS pole foundations would be small given the length of the project. Excavations for traction power facilities would be limited to a depth of about three feet or four feet where duct banks are required. Any spoils found to be contaminated at levels that would be hazardous to workers or the public would be disposed of in accordance with *regulatory requirements*.

The EA/EIR is careful to distinguish between pre-existing hazardous wastes, hazardous wastes that may be generated by construction activities, and hazardous materials that may be used in construction or be contained in electrification facilities, such as battery acids. The risk of upset of such materials is addressed in Section 4.2.5, [Construction Phase] Hazardous Wastes. Handling of hazardous materials would be in accordance with applicable laws and regulations as set forth in the pre-construction mitigation plan and worker health and safety plan, which would be monitored during construction by a Certified Industrial Hygienist.

Regarding the soil management procedures presented in Section 4.2.5.2, [Construction Phase Hazardous Wastes] Mitigation, if soil spoils are determined to be hazardous, JPB would require the construction contractor to contact DTSC's Hazardous Waste Management Program to determine whether a hazardous waste permit or variance from permitting requirements is required. A soil management plan *will be prepared, most likely as an update of JPB's current Soil Management Plan*, the purpose of which is to limit exposure to toxic compounds and properly dispose of contaminated



materials. Table 1.5-1 *has* been revised to include DTSC's review and approval of this plan prior to initiation of construction activities.

The text of paragraph eight of this section has been revised to cite the need for the worker health and safety plan to meet the provisions of California Code of Regulations, Title 22, section 5192.

Thank you for the Voluntary Clean-up Program Fact Sheet. Caltrain appreciates DTSC's offer to assist us in characterization and cleanup activities through your Voluntary Cleanup Program. JPB will seek to include DTSC in all pre-construction meetings involving planning for or identification, characterization, remediation, or disposal of hazardous wastes, contaminated soils or hazardous materials encountered or generated during construction.

**13.1.2 Bay Area Air Quality Management District (BAAQMD), Jack P. Broadbent, Executive Officer/APCO, May 25, 2004**

The EA/DEIR indicates that the entire Caltrain right-of-way is an area with a high probability of encountering hazardous materials (p. 3-67). If new rail infrastructure along this corridor (including the construction of the 13 traction power station facilities) could result in people's exposure to hazardous materials such as asbestos, lead-based paint and/or contaminated soil, then the Final EIR should address those potential air quality impacts and propose appropriate mitigation measures. Demolition activity, soil remediation, and the storage and handling of fuels and solvents require careful mitigation planning and may require prior approval and/or a permit from the District. For more information on District regulations regarding these activities, please contact our Compliance and Enforcement Division at (415) 749-4795.

**Response 13.1.2** The potential for exposure to contaminants during construction was addressed in Section 4.2.5, [Construction Phase] Hazardous Wastes, of the EA/EIR. Contaminants of concern along the Caltrain corridor are arsenic, lead, and total petroleum hydrocarbons. Text has been added to subsection 4.2.5.1 to identify these likely contaminants and state that the potential for large-scale releases of airborne contaminants is limited. Construction of the OCS infrastructure and traction power facilities is not expected to require extensive earthwork that would result in large-scale releases of contaminants or health effects. Extractions from the excavations for OCS pole foundations would be very small in quantity, while excavations for traction power facilities would be limited to a depth of about three feet over an area of about 115 feet by 200 feet for the *two* large substation compounds and much smaller areas for the remaining facilities. Excavation of trenches for duct banks would go down four feet. This limited earthwork would be controlled as described in Section 4.2.5.2, [Construction Phase Hazardous Waste] Mitigation to prevent air impacts or health effects. Please see the response to Comment 13.1.1 for more particulars regarding protections for worker and public health and safety during construction.

## 14.0 NOISE IMPACTS

### 14.1.1 BART, Roger Avery, Engineering Department, May 25, 2004

"The statement on page 3-98 that 'Impacts (of noise) from Train Horns and Crossing Bells...would not change due to the Electrification Program' is not correct. The sounds will increase in duration and more locations will be affected due to the higher speeds and the longer distance away from the Grade Crossings that the horns must be blown. This of course may be some what offset by the reduction in locomotive noise but the necessary strident sound of the Horns and Crossing Bells is generally more annoying than the diesel locomotive sound. The anticipated increase in the number of trains will also directly increase the overall duration of the noise making it more objectionable to local residents and workers."

**Response 14.1.1** California PUC Code Section 7604 requires trains to blow horns a constant distance (1/4 mile) from crossings. Thus the Electrification Program is not expected to change the amount of noise generated by train horns. The Electrification Program will help to reduce the train noise by using electric locomotives and newer cars. As reported in EA/EIR Section 3.11, there will be substantial reductions in severe noise impacts as a result of the Electrification Program compared with continued diesel operations.

### 14.1.2 City of Menlo Park, Kent Steffens, Director of Public Works, May 25, 2004

"...The DEIR claims the potential for substantial noise reduction benefit as the result of electrification. However, in areas near grade crossings, any such benefit would be imperceptible because of the continued impacts of the much more disturbing train horn soundings. In Menlo Park, where there are four grade crossings in the corridor's 1.5 mile traversal of the community and two more, one just north and one just south of City limits, for an average of one grade crossing every quarter-mile, the adjacent land use in Menlo Park along the entire corridor is adversely impacted by train horn noise. Until grade separations or other actions eliminate the routine sounding of train horns at grade crossings, the claimed noise reduction benefits of the electrification project will generally be unperceived by the public. To eliminate the inaccurate portrait of noise reduction benefit that the DEIR currently presents, the document should provide noise contour maps for the alternatives in which the effects of train horn noise are considered as well as the other forms of train noise."

**Response 14.1.2** The noise analysis presented in the environmental document is consistent with FTA-approved methods and focuses on train pass-by noise impacts of the Electrification and No-Electrification alternatives. The Electrification Program would help to reduce train pass-by noise by using electric *equipment*. As reported in EA/EIR Section 3.11, there would be substantial reductions in noise impacts *between San Francisco and San Jose* as a result of the Electrification Program compared with continued diesel operations. These are accurate and valid results that would benefit the majority of residents and employees along the 51-mile Caltrain corridor *to be electrified*.

It is true, nonetheless, that train horn noise is the dominant noise source near grade crossings, and horn noise would continue to affect residents in these locations, despite the substantial reductions in locomotive engine and rail car noise that would result from electrification. *A substantial proportion of the sensitive receptors included in the noise analysis live within the zone of influence of the train horns. These residents may not perceive a substantial reduction--or any reduction--in overall noise.*

Caltrain is pursuing an incremental program of grade separations with the ultimate goal of grade separating the entire corridor. This is an important Caltrain goal because of the potential safety benefits. It would also have the benefit of reducing noise, since the trains would not have to sound their horns at grade crossings.

### 14.1.3 City of Mountain View, Matt Pear, Mayor, May 18, 2004

"Complaints received by City residents about Caltrain typically involve wheel squeal, vibrations, train horns and whistles-not diesel engine noise. Although train horns and vibrations are identified in the

document, the EIR does not identify wheel squeal as an impact or suggest possible mitigation measures for any of these noise generators. We suggest including a discussion of this item in the EIR.”

**Response 14.1.3** Wheel squeal occurs when trains travel sharp curves, or as a result of poor wheel/rail profiles and is independent of electrification except insofar as new rolling stock with truer wheels would be acquired. Squeal noise can be minimized by changing the radius of the track curve, by applying special friction reducers, by maintaining wheel/rail profiles, and through a regular program of wheel truing. *Improved track conditions are being pursued in other portions of Caltrain’s program.*

**14.1.4 Redwood City, Planning & Redevelopment, Gary Bonte, Associate Planner, May 19, 2004**

“Table 4.2-3 of the Draft, addressing local noise ordinances, states that Redwood City’s Ordinance permits construction noise levels of 110 dBA on Saturday, Sunday and holidays from 9 a.m. to 8 p.m. Actually, the Noise Ordinance prohibits construction noise at or near residential areas all day on Saturdays, Sundays, and holidays (see attachment).”

**Response 14.1.4** The Redwood City Noise Ordinance does allow construction to produce 110 dBA on weekends, if such construction is emergency construction or repair. *Neither condition would apply to the electrification program.* JPB will try to minimize construction noise in such areas to the extent possible *and will coordinate with local jurisdictions during the construction process.*

**14.1.5 City of Sunnyvale, John Howe, Mayor, May 12, 2004**

“4. Train Noise Issues: The report states (Page 3-95, third paragraph) that noise level references for the existing gallery cars could not be measured because of the dominant diesel locomotive noise during pass-bys. However, on Page 3-97 is the description of noise measurements obtained for a bi-level Sounder coach (A Bombardier-built Seattle area coach, probably on loan to Los Angeles Metrolink, and similar to the new Caltrain ‘Baby Bullet’ cars) on pass-bys on Southern California. As Metrolink is also powered by diesel locomotives, how were these measurements obtained; and if they were, why could not measurements be obtained for the gallery cars? This shall be explained in the Final EIR, and if there is no reasonable constraint to gathering this information, then information on the existing gallery cars shall be collected and presented in this noise analysis.

“Table 3.11-4 summarizes the findings on noise. The format of the table tends to obscure some conclusions. If the Grand Totals were to combine the ‘Impact’ and ‘Severe Impact’ values, and then also to add these resulting numbers together for both the ‘Single Family’ and ‘Multi-family’ subtotals, a single Impact-number for each Option would result as follows:

“Non-Electrification/ Diesel Alternative, Residences Impacted:	1,667
“Option 1, New Electric Locos & old Gallery Cars, Residences Impacted:	1,099
“Option 2, Multiple Unit Cars, Residences Impacted:	1,510
“Option 3, New Electric Locos & new Bi-level Cars, Residences Impacted:	0

“Both Options 1 and 3 use electric locomotives, so the net benefit is due to the trailer coach replacement, not anything related to electrification. If this is so, replacement of the present gallery cars with new bi-levels, which is already being undertaken by the JPB achieves the significant noise reduction without electrification. This should be presented as the base non electrification comparison alternative.”

“...The report shall also consider soundwalls as a noise mitigation alternative, as noise reduction is a primary project purpose and benefit. This alternative shall be developed in detail with appropriate siting, cost, and noise reduction analysis.”

**Response 14.1.5** The FTA model used to calculate train noise has standard noise emission levels built in for different types of locomotives and passenger cars, and these values are typically used for conducting a noise impact study. When there is a need to analyze a new type of locomotive or passenger car that is not listed in the FTA model, specialized noise measurements are required to

determine the noise emission of the rail vehicle. The measured values can then be used in the model instead of the standard levels. Noise levels generated by the existing Caltrain locomotives and cars are included in the FTA model; therefore, there was no need to conduct the type of measurements necessary to distinguish the locomotive noise from the car noise for the purpose of developing new emission levels.

The purpose of the measurements conducted next to the Caltrain trains was to determine the existing background noise levels that included the train pass-by, but measurements next to the Metrolink trains were conducted to specifically determine the separate noise levels from the locomotive and cars. Measurements could also be conducted next to the Caltrain trains to determine the locomotive and car noise separately, but there is no need to do this type of measurement to implement the FTA noise impact analysis method appropriately.

Combining results for *Moderate Impact* and *Severe Impact* categories tends to obscure the results; that is why the FTA noise analysis method separates the two types of impacts. As the text accompanying Table 3.11-4 explains, the effect of the Electrification Program is to reduce many of the *Severe Impact levels* to *Moderate Impact* levels. This is a real and substantial decrease in noise.

*Only Electrification and No-Electrification are analyzed in the update. There are no longer different options for electrification.* As service increases, electrified operations become even more important in reducing train pass-by noise beyond the benefits that can be realized simply by purchasing a new diesel fleet.

It is not JPB policy to construct sound walls to mitigate train noise impacts.

**14.1.6 League of Women Voters of San Mateo County, Linda Craig, County Council Coordinator, Judy Orttung, Onnolee Trapp, Transportation Co-chairs, May 1, 2004**

"Although Noise during electrified train operation would be reduced from No-Project's 'Impact' and 'Severe Impact' levels created by the train sets, there would still be the same noise impacts from train horns and crossing bells, which, although mentioned on page 3-98, are not tabulated in any table. Would total grade separation eliminate these impacts?"

**Response 14.1.6** Grade separation eliminates the need for trains to sound horns at grade crossings. The Electrification Program will not change the number of grade crossings; therefore, only the effects of using different locomotives and passenger cars are considered for its noise study. Caltrain is implementing a progressive program of grade separations in order to meet the ultimate goal of grade separating the entire line.

**14.1.7 Jim Bigelow, San Carlos Hearing Speaker, May 1, 2004**

"...For residents that live along the train line at the JPB meetings, they beat them to death about the noise, and if you are going to increase service and have trains 50-100 feet right from the rail, you need to get rid of the diesel sounds, you need to quiet it down, because you're going to have an ever increasing footprint for years without electrification. Overhead wires—I go to the east, I don't hear a lot of this in the east, after they put the catenary wire system up—I think the main thing for residents is the quieting down. You need to get rid of the gallery cars and go with the roll on and roll off like BART."

**Response 14.1.7** Comment noted.

**14.1.8 Elizabeth Blois, Menlo Park, May 25, 2004.**

"We do not live directly next to the tracks, but about 3 blocks away. The impact of the noise pollution on our home is not adequately assessed in the EIR. We believe we will have significantly more noise if the proposed changes are made."

**Response 14.1.8** The noise reduction benefits of electrification would not *likely* be noticeable at residences located three blocks away from the tracks--but this does not mean that the noise would be

greater, only that such receptors are too far away for the reduction in train pass-by noise to be perceptible. There would be no increases in train noise as a result of the Electrification Program. Electrification would substantially reduce noise impacts of train pass-bys for residents close to the tracks in comparison with continued diesel operations, particularly given the recent increases in train service and those proposed to be implemented under the Strategic Plan.

**14.1.9 Martin Engel, May 25, 2004**

"I oppose the plan to electrify the Caltrain commuter system. Here's why:

"...There will be no horn or other noise abatement."

**Response 14.1.9** The Electrification Program will not change the number of grade crossings; therefore, it would not affect the noise of train horns. As reported in the EA/EIR Section 3.11, however, electrification would reduce the impacts of train pass-by noise substantially when compared with continued diesel operations, particularly given the increases in service proposed under the Strategic Plan.

**14.1.10 Joseph Grass, May 25, 2004**

"An elevated train track will project a great deal more noise into the surrounding residential neighborhoods, compared to the alternative of leaving the train track at grade level with streets going below grade level at crossings."

**Response 14.1.10** There are no plans to elevate the Caltrain tracks as part of the Electrification Program. Grade separating the train tracks from vehicular traffic and pedestrians at cross streets is a long-term Caltrain goal, for safety reasons.

**14.1.11 Kaaren Hanson, May 25, 2004**

"An elevated train track will project a great deal more noise into the surrounding residential neighborhoods, compared to the alternative of leaving the train track at grade level with streets going below grade level at crossings."

**Response 14.1.11** Please see the response to Comment 14.1.10.

**14.1.12 Judith M. Oranasu, Ph.D., May 25, 2004**

"Electrification will not reduce the noise from train horns or crossings."

**Response 14.1.12** Please see the response to Comment 14.1.9.

**14.1.13 Margaret Petitjean, May 26, 2004**

"Comment Re: Misnomer in the Environmental Assessment/Draft Environmental Impact Report

"A vote for electrification. The inference that the diesel train noise and horn blasts are an "annoyance" shows gross ignorance of the health hazard of noise.

"Forwarding decades-old report from the EPA. It is the responsibility of the polluter (Caltrain) to recognize and research the further ongoing studies and investigations into the lethal effects of the noise pollution of the trains and horns.

"For instance Acoustic Trauma of the horn blasts can buckle the knees (he/she sat or lay on the tracks or didn't move), is capable of "freezing" from the "startle effect" or the "looming effect" of the combination of the monster train and the loud blasts. The forces can disorient with loss of balance.

"Hundreds of people have documented their steep-deprivation which, in itself, is undeniably a serious health hazard, with the resulting fatigue, tinnitus, many other hearing and nerve and muscle medical

problems, and other off-track accidents. It is therefore unconscionable to call this abuse of high blood pressure, heart and brain attacks, etc. from noise assault as merely “annoyance” in a million dollar environmental impact report.

“Updated independent housing acoustic engineering reports and knowledgeable medical opinions such as from those in our group who have previously testified should be included in the final report. To do less is negligence.

“It should be noted that, Ms. Maria Pang, Environmental Manager promised to call and discuss the statements to be included in the EIR. She failed to do so, which begs the questions: Are you really serious about including the resident stakeholders as required?”

**Response 14.1.13** Use of the term, “annoyance,” to denote one of the effects of train horn noise is consistent with FTA noise impact analysis methodology.

The Electrification Program does not change the number of grade separations or increase train service along the Caltrain corridor and therefore would not change the frequency of horn soundings or their decibel level, although electrification would reduce train pass-by noise substantially compared with continued diesel operations. Noise levels of train horns are set by Federal regulations. We are not aware of any reliable and credible study indicating that train horn noise is lethal or that it can cause buckling of the knees. The purpose of the train horn is to provide a warning signal for people to clear the tracks if they are near or on tracks; it is a safety device the use of which is regulated by the FRA and the Public Utilities Commission (PUC).

It is documented that people who live next to railroad grade crossings can be awakened by train horn noise, and sleep disturbance can have health effects on certain individuals. However, horns are a safety device and they are necessary to operate a train system safely.

#### **14.1.14 William Robinson, FP International, San Francisco Hearing Speaker, April 22, 2004**

“Why are they (BART) so noisy? They do buzz. Is it because they have different motor system? Second, braking is not a quiet thing. So, Caltrain at the platform side is dangerous to the ears. Can they use electric circuit to reduce the noise?”

**Response 14.1.14** The solid state chopper units in the older dc-drive BART cars and some of the inverter units in the upgraded 3-phase ac-drive BART cars can hum under certain working conditions. This may be the buzz to which the commenter refers. Current designs of electric locomotives and EMUs all use 3-phase ac drives with inverters, which tend to be less noisy than the older chopper units.

Electrically powered vehicles make use of dynamic braking in which the motor circuitry is switched so that the motor operates “in reverse” as a generator. In the generator mode the drive motors slow the train, and at the same time generate electric power that can be fed back into the overhead lines. The use of regenerative braking in electric vehicles reduces the reliance on friction braking, which produces the braking noise the commenter references and which is the standard method for slowing diesel *locomotives* and trailer cars.

#### **14.1.15 <<Unidentified speaker>>San Francisco Hearing Speaker, April 22, 2004**

“Will it reduce noise on breaking for electric compared to diesel?”

“Noise...Compared to diesel at the present time?”

**Response 14.1.15** Please see the responses to Comments 14.1.3, 14.1.9, and 14.1.14. Electrification would substantially reduce noise from train pass-bys compared with present and future diesel operations, but would not affect the noise from train horns.

## **15.0 PUBLIC UTILITIES AND SERVICES**

### **15.1.1 Town of Atherton, Kathy McKeithen, Mayor, May 20, 2004**

"Public Services

"The DEA/EIR makes no mention of the Town of Atherton City Hall complex immediately adjacent to the Caltrain tracks. This complex includes the Police Station, City Hall, Post Office, Library, Permit Center and Public Works Corporation Yard.

"Please include these Town of Atherton facilities, and address the impact thereon, in the report. The report should also address the potential interference of the electrified wires on emergency radio reception from the Atherton Police Dispatch center, and others along the corridor."

"...Recreational Facilities

"...The DEA/EIR states that there would be "no proximity impacts on public parks and recreation areas." It is not clear what a proximity impact is, but the poles and wires, and the removal and trimming of screening trees will have a significant impact on Holbrook-Palmer Park, which abuts the Caltrain right-of-way. This impact needs to be appropriately addressed."

**Response 15.1.1** There would not be long-term impacts from the placement of Electrification Program OCS infrastructure on Town of Atherton City Hall complex facilities. Short-term construction phase impacts would be experienced up and down the corridor as described in EA/EIR Chapter 4, Temporary Effects During Construction, and specifically Section 4.2.10, [Construction Phase Impacts on] Public Services and Facilities. There would be no greater impact on emergency radio reception from the 25 kV ac electrification system than is created by similar voltage electric utility distribution systems.

No direct impacts on Holbrook-Palmer Park are anticipated. Although the Caltrain right-of-way is narrow through the segment of the corridor adjacent to the park, it would be possible to place the OCS infrastructure without affecting park property. No tree removal is contemplated; please see general response: Tree Trimming. Tree trimming would be accomplished to provide adequate clearance for safe electrified operations in accordance with Caltrain right-of-way maintenance practices and Atherton tree ordinance restrictions.

### **15.1.2 Redwood City, Planning & Redevelopment, Gary Bonte, Associate Planner, May 19, 2004**

"Table 3.16-1 indicates states: "The California Water Service Company provides water service to unincorporated Redwood City, and the City provides service for remaining area." A variety of public and private underground utilities cross the Caltrain tracks within Redwood City. These include gas mains, phone lines, sewer and water lines. In addition, there are other underground utilities that parallel the Caltrain right of way including fiber optic cables. Redwood City's Engineering Division has information on the specific locations of these underground utilities. Care must be taken to assure that the foundations for the poles that will support the overhead catenary do not disturb or damage any underground utilities."

**Response 15.1.2** Tables 3.16-1, Summary of Existing Utilities with the Peninsula Corridor Right-of-way and Table 3.16-2, Utilities *near* Proposed Traction Power Locations identify known utilities, but this information would be updated and augmented through coordination with local utility providers and jurisdictions. As stated in Section 3.16.3, [Utilities] *Mitigation*, JPB *will* coordinate with all utility providers and local jurisdictions beginning during preliminary engineering and continuing throughout the design phase of the project to identify all subsurface and overhead utilities so that design and construction can be developed to avoid impacts and interruptions in service. This commitment includes coordination with Redwood City to obtain the utility information referenced in the comment.

**15.1.3 City of Santa Clara, Geoffrey Goodfellow, Director Planning and Inspections, May 25, 2004**

“...Silicon Valley Power (SVP), a municipal utility, is the electric service provider within the Santa Clara City limits. According to SVP, there is sufficient capacity to serve any proposed loads within its service territory. Coordination with SVP and the City's Water Department shall be required for permitting and installation of facilities and services, as a responsible Agency, and should be noted in the EA/EIR.

“Thank you for the opportunity to review the EA/EIR for the Caltrain Electrification Program. We look forward to your response and the inclusion of our comments in the final environmental document. Should you have any questions or comments regarding the information presented above, please call the Planning Department at 408-615-2450.”

**Response 15.1.3** Caltrain will work closely with Silicon Valley Power for all appropriate permits and service requirements during construction of the Electrification Program.



## **16.0 SAFETY AND SECURITY**

This section of comments has two sub-categories: Safety at Grade Crossings / Traffic Safety, and Safety of Electrified Train Operations.

### **16.1 SAFETY AT GRADE CROSSINGS / TRAFFIC SAFETY**

#### **16.1.1 City of Sunnyvale, John Howe, Mayor, May 12, 2004**

"2. Railroad Gate Down Time: As described in Section 2.3.2.7, much of the existing Caltrain signal system (mostly newly-installed under the 'Baby Bullet' CTX project) will have to be modified and/or replaced because the track circuits are not compatible with electric traction power negative return through the rails. Of greatest significance to the City, the Constant Warning Time feature of state-of-the-art grade crossing signals (especially important at locations near Caltrain stations such as at the Sunnyvale Avenue crossing) is available for non-electrified railroads such as Caltrain is now, but is incompatible with electric railways. This could also affect the Mary Avenue crossing but probably to a lesser degree because trains operate there at full speed.

"The report admits that electrification affect on the signal system could create problems by causing extended gate down time. The report also admits that there is no off-the-shelf solution for this, and that the traffic impact at the Caltrain crossings would be greater than along any other electric railway in the country. Therefore the proposed solution in the report is to solicit equipment suppliers to develop a new technology ('Caltrain is considering a pilot project...') especially for Caltrain based on untried 'new technology'. How this research and development project would interface with the electrification project and what it would cost, is not fully described. This is a significant, unmitigated impact, and shall be addressed as such in the EIR. Detailed assessment of the resulting impact on traffic flow and delay on Mary and Sunnyvale Avenues at the railroad crossings shall be included in the FEIR. Assessment of additional noise impact due to prolonged sounding of crossing warning bells shall also be provided in the FEIR. Appropriate mitigation shall be identified such as grade separation or feasible crossing warning signal modification using available technology."

**Response 16.1.1** It is assumed that signal system technology that enables operation of the constant warning time grade crossing gate operations will be implemented as part of the Electrification Program. As noted in the comment, this technology does not currently exist and Caltrain proposes to develop it as part of the Electrification Program during the final design phase of the project. It is expected that existing signal system technology, which is being developed as part of research on high speed rail operations in the United States such as radio controlled or communications-based train control technology, could be used for this purpose. One of the main reasons why this technology does not yet exist is that there has not been demand for this equipment given the lack of electrified railroads in the United States. Most European systems (and electrified systems in the United States) have only a small number of at-grade crossings and very low volumes of traffic where they do have at-grade crossings.

Although not part of the Electrification Program, one of the JPB's long term goals is to reduce the number of grade crossings on the railroad. By constructing grade separation projects Caltrain will totally eliminate the traffic impacts of railroad gates *at the crossing*.

See the response to Comment 14.1.2 for more information on train noise associated with horns.

#### **16.1.2 City of Morgan Hill, J. Edwards Tewes, City Manager, April 22, 2004**

"The City of Morgan Hill has reviewed the Draft Environmental Impact Report for the Caltrain Electrification Program and is very supportive of the Board's efforts to modernize the Caltrain system. We believe that the reductions in noise pollution and air pollution will be especially appreciated in our South County location.

"As Caltrain's popularity grows, we are all hopeful that additional funding will be identified and the frequency of train service to Morgan Hill will be increased. When this occurs, the safety hazards presented by the numerous at-grade crossings and unfenced railroad right-of-ways in Morgan Hill will also increase. The City asks that the Peninsula Corridor Joint Powers Board continues working cooperatively with the City on reducing the safety hazards associated with rail travel throughout the City of Morgan Hill."

**Response 16.1.2** Caltrain has an ongoing program of working with communities along the corridor to reduce safety hazards associated with rail travel. Caltrain will continue this program as part of the Electrification Program and all other projects intended to improve rail service.

## **16.2 SAFETY OF ELECTRIFIED TRAIN OPERATIONS**

### **16.2.1 San Mateo County Transportation Authority CAC, Doris J. Maez, April 30, 2004**

"p. S-5, S.2.2.1 "the overhead contact system, however, may have to be deenergized at some overhead locations in order to operate certain freight trains..." Does this represent a safety hazard? How does the OCS get deenergized in scattered locations? Is there a fail-safe method to assure that a segment is properly deenergized??"

**Response 16.2.1** Deenergizing OCS is a common process for all types of electrified railroads. All railroad operations can be hazardous and therefore all railroads have extensive safety and training programs designed to minimize hazards and insure safety. Mechanisms with safety overview features would be incorporated in the traction power wayside facilities, which would permit remote operation [opening and closing] of disconnect switches and circuit breakers with control and operation from the *Power Director's* office in the Lenzen CEMOF. Local control and operation on site by qualified maintenance staff, under the supervision of the power director, could also be implemented at these locations. Caltrain would implement a comprehensive and on-going electrical operations safety program as part of the Electrification Program for all Caltrain employees, contractors, local government agencies emergency response staff, and others who might be affected by electrification of the line.

### **16.2.2 City of Menlo Park, Kent Steffens, Director of Public Works, May 25, 2004**

"...The 'Public Services and Facilities' section of the DEIR contains no information about the potential safety risks of the electrified system. What happens when 'hot wires' fall down due to some kind of incident (storm winds, motorist collision with support, etc.)? How quickly does the power get shut off? How frequently do such incidents happen in areas like the Boston to Washington corridor where such systems are operational? The DEIR is completely lacking regarding information of this type. Such considerations should be addressed in the document."

**Response 16.2.2** The power supply and distribution system would be monitored by a relay protection system that would be located in the power supply switchgear units in the wayside facilities. The relay protection system would consist of multiple levels of protection to handle over current conditions, thermal heating of the conductors, and direct short circuits (resulting either from a broken conductor hitting the rail or ground, or from a grounded object coming into contact with the overhead conductors). The most common occurrences are short circuits. Electrification systems experience grounding of the system (a short circuit) most often during storms, which are usually caused by trees falling and coming in contact with or breaking one or more of the overhead conductors. The protection systems identify the short circuit and trip the power supply breaker(s) for the relevant electrical section, thereby disconnecting the power from the circuit. The speeds at which tripping occurs are determined in a relay coordination study as part of the detailed final design but, generally, the tripping times are of the order of 40 to 100 ms (milli-seconds).

As far as frequency of incidents, trippings from storms can range from none to hundreds, depending on the severity and extent of the storm. Information obtained indicates that the Washington to Boston corridor had over 650 trippings during the first nine months of 2004. Approximately 10 of those

trippings were caused by a large tree (over 12 inches in diameter) falling onto the OCS, resulting in a broken conductor. There is no record of recent collisions between a highway vehicle and a support structure. Typically, OCS design engineers try to set support poles well clear of grade crossings to minimize the possibility of such incidents. However, railroads do very infrequently experience rail vehicle derailments that can damage support poles, usually resulting in broken and grounded OCS wires, for which the relay protection systems trip the supply breaker(s) and remove the power from the conductor, as noted above."

**16.2.3 Yuriko Kishimoto, Palo Alto City Council, Sunnyvale Hearing Speaker,  
April 24, 2004**

"Second, whether there are potential safety impacts? I know stopping distance must go down but...Cars number of accident and suicides."

**Response 16.2.3** The improvement in deceleration of electric trains over diesel could have a small benefit in terms of reducing accidents between trains and objects on the tracks, but even with this improved deceleration ability, fast moving trains still require a relatively long distance to stop. The best way to reduce this type of accident is to fully separate the right-of-way from other traffic and pedestrians. See the response to Comment 16.2.2 for additional information about safety.

## 17.0 VISUAL IMPACTS AND MITIGATION

### 17.1 GENERAL VISUAL IMPACTS

#### 17.1.1 San Mateo County Transportation Authority CAC, Doris J. Maez, April 30, 2004

“Adverse Visual Impact vs. “Image”

“Residents or business occupants, however, may consider these (placement of OCS poles and wires for electrification) visual effects adverse” (p. 3-3, Section 3.1.2.1 and 3.1.2.2). Justification for the adverse visual change is that “these types of facilities are consistent with the existing visual quality of the active commuter and freight rail.” No compelling evidence supporting this statement is presented. Quantification of the number of residences and businesses affected by the visual aspects of the project should be done as part of this document. “A substantial decrease in noise and air emissions in the area due to the elimination of diesel operations may partially offset these visual changes.” is a weak argument.”

“San Bruno Station

“...the poles and overhead wires would be visible in comparison with the street lighting electroliers and elevated parking structure at this location. Construction of the poles would introduce new vertical structure visually similar in size and frequency to the existing street light electroliers along San Bruno Avenue (p. 3-6, Downtown San Bruno, and p. 3- 7, Figure 3.1-2). These statements and the resulting figure are incorrect, since a grade separation project is in the planning stages for that location that would create a 700 foot long elevated platform that is as high as the “parking structure” (which in fact is part of an auto dealership), and the OCS structures would be on top of that platform, creating a much higher profile. The resulting profile will be similar to that shown for the San Carlos station (Figure 3.1-3), although the angle at which that picture was taken tends to diminish the actual height of the OCS. This is misleading at best.”

**Response 17.1.1** The EA/EIR is straightforward in reporting the physical changes that would occur with the Electrification Program, including new OCS poles and wires, traction power station facilities, and trimming of trees and other mature vegetation to enable placement and safe operation of the poles and wires. As stated in Section 3.1.1.1, Visual Character of the Caltrain Corridor, existing transportation facilities, including railroad tracks, ancillary structures, area freeways and roadways, are the dominant visual elements along the existing Caltrain corridor. The railroad and its ancillary facilities preceded nearly all of the development that currently exists along the corridor, and therefore, introducing additional railroad-related facilities, such as the OCS poles and wires, does not constitute a substantial adverse visual change. These types of facilities are consistent with the existing visual elements of the corridor, which carries active daily commuter and freight rail service.

*Quantifying the number of residences and businesses that can see the rail corridor would not improve the estimate of visual impacts as stated.* The second paragraph in Section 3.1.2.2 has been revised to delete the reference to the offsetting effects of air quality improvements and noise reductions.

A grade separation is being planned at San Bruno Avenue and the San Bruno Caltrain station, which would be relocated from Sylvan Avenue to an elevated structure over San Bruno and San Mateo Avenues. The existing at-grade crossings at South Linden Avenue in South San Francisco and Angus Avenue would also be grade separated from the railroad corridor and Scott Street would be closed to vehicular traffic as part of this *separate* Caltrain project. Design plans for this station relocation/grade separation project would be closely coordinated with design of the OCS infrastructure in this location if the Electrification Program goes forward. The visual simulation for the San Carlos grade-separated station that appears in Figure 3.1-5 of the EA/ EIR is therefore a better approximation of what the OCS poles and wires would look like in the elevated configuration than the at-grade simulation provided for San Bruno.

The text of the Revised EA/Final EIR has been revised to acknowledge this planned grade separation project and the San Bruno simulation removed.

**17.1.2 San Mateo County Transportation Authority CAC, Doris J. Maez, San Carlos Hearing Speaker, May 1, 2004**

“...And also in your pictures over here, in the San Bruno Station location, and I’m on the Grade Separation Citizen’s Committee, and there is a grade sep plan and the picture won’t look anything like what’s there. It’s very misleading. The profile will be much higher than it shows. That picture shouldn’t be used; it should be gotten rid of.”

**Response 17.1.2** Please see response to Comment 17.1.1, Part B.

**17.1.3 City of Mountain View, Matt Pear, Mayor, May 18, 2004**

“Visual Impacts of the Overhead Contact System

“We believe the installation of an overhead contact system (OCS) will cause significant visual blight throughout the Caltrain corridor. The EIR identifies the visual impacts of the OCS as less than significant; however, residents and businesses along the corridor may disagree with this finding. Considering the visual impacts of the OCS cannot be avoided, the EIR should identify this impact as an unavoidable significant impact. This is especially true considering trees, which currently screen homes and businesses from the railroad, will need to be removed in certain locations to allow for safe placement of the OCS system.”

**Response 17.1.3** Please see the response to Comment 17.1.1, Part A. Also see the response to Comment 17.2.4.

**17.1.4 City of Sunnyvale, John Howe, Mayor, May 12, 2004**

“...There is one traction power substation proposed for construction in Sunnyvale. It is located north of the Caltrain tracks and east of the Lawrence Expressway overhead, as illustrated in Figure 2.3-15. Visual mitigation shall include landscaping...”

**Response 17.1.4** As described in the EA/Draft EIR, Section 2.3.2.4, Substations, Switching Stations, and Paralleling Stations, paralleling stations are typically small in comparison to primary substation facilities; their *compound* dimensions would be about 40 to 60 feet wide by 100 to 120 feet long. *The new location for Paralleling Station 6 (Figure 2.3-13) is near the Sunnyvale Caltrain Station within Caltrain right-of-way along West Hendy Avenue. Existing vegetation in this area will be retained to the extent feasible.* JPB will consult with the City regarding the feasibility of planting to soften the site as viewed from surrounding areas.

**17.2 VISUAL IMPACTS OF OVERHEAD CONTACT SYSTEM**

**17.2.1 Town of Atherton, Kathy McKeithen, Mayor, May 20, 2004**

“Catenary Visual Impact

“Considerable funds have been expended in this Town and in many Cities along the corridor to underground overhead utility wires to rid the cities of the blight created by the proliferation of overhead wires. Adding these Caltrain electrification wires would be a major step backwards from a visual standpoint.

“The EIR shows the appearance of the catenary wires on a number of plates. Figure 3.1-5 shows the Atherton Station area from the parking lot. It does not show any support poles and minimizes the wire impact. The text states that the support poles would be largely obscured by the existing landscaping. It states “There would be only a minor visual effect.” However, the view to the corridor

from the residences along the corridor, from Holbrook-Palmer Park and from the Town Center complex will be dramatically and significantly impacted by the addition of the poles and wires. The view used for the rendering is not representative of the view from the Town center, and is certainly not representative of the view after extensive vegetation removal.

"The document goes on to state that measures to mitigate visual impacts will be incorporated into the project design, but it also states that screening landscaping may need to be removed, and that additional landscaping may not be possible due to safety clearances from the wires. It therefore appears that it is not possible to mitigate the visual impacts of this system. This impact is therefore significant, and apparently cannot be mitigated to a less than significant level."

"...Avoidance or Mitigation

"...Another alternative is to delay electrification until the corridor is grade separated, either by Caltrain or by the High Speed Rail project, then use third rail electrification instead of overhead catenary, avoiding both the visual impact and the tree trimming impacts. It is possible to have trains pick up their power from both overhead and third rail, allowing grade separated portions of the corridor to use third rail, while at grade portions use catenary. This would mitigate the dual impacts of grade separation and overhead wires which could result in poles extending 60 feet high. It would also provide an incentive for at-grade portions to grade separate. Note also that this delay will save significant costs, because not only is the third rail less costly to construct and maintain than the catenary system, but costs to shoofly the electrified system would be considerable."

**Response 17.2.1** The visual simulations in the EA/EIR attempt to show a variety of situations that are representative of the types of visual conditions that exist along the Caltrain corridor. The location chosen for Atherton was selected because it is representative of the 25 mile-long segments (25 percent of the total 102 miles, considering both sides of the 51-mile-long corridor) having dense vegetation between the railroad and adjacent land uses. Locations having views that are more open to the rail corridor are depicted in Figures 3.1-2, 3.1-7, 3.1-8, 3.1-10 and 3.1-11.

OCS mitigation measures discussed in Section 3.1.3 in the EA/ EIR focus on selection of OCS configurations that will place the poles and wires as far as possible from adjacent residences, the use of headspans instead of *portal beams* to lighten overhead elements in areas sensitive to increasing visual clutter, and coordination with local jurisdictions. These measures are expected to be effective in reducing visual effects. It is important to remember that transportation facilities dominate the visual setting along the Caltrain right-of-way, which is an active commuter and freight rail corridor and the new OCS elements are consistent with that existing visual character. Please also see the response to Comment 17.1.1.

Third rail power distribution does not meet the technical requirements for Caltrain electrification; *hence, this option is not feasible or advisable*. For more information please see general response: OCS and Third Rail Power Distribution.

#### **17.2.2 City of Belmont, Craig A. Ewing, AICP, Planning and Community Development Director, April 7, 2004**

"Aesthetics - We agree that the statement that the introduction of the poles and wires required by an overhead contact system (OCS) may be considered an adverse visual effect by residents and local business operators (p. 3-1). Further, we support the mitigation measure identified on page 3-17 indicating that the Joint Powers Board

*"will coordinate with local jurisdictions and neighborhood associations along the right-of-way to develop design guidelines to minimize visual effects. These may include aesthetic measures such as incorporating landscaping into final design, varying pole placement 0 tapering and painting poles to blend into the surrounding environment."*

"Given the positive screening effects enjoyed by Belmont from planting trees in our street medians and side walks, we believe this mitigation must be included as a requirement on the project. Such

reference is missing on the mitigation summary chart on page 8-10 and we respectfully request that tree plantings be highlighted wherever appropriate in the EIR.

"Thank you for the opportunity to comment. Please contact me at City Hall (650-637-2908) should you have any questions."

**Response 17.2.2** As stated in the EA/EIR in Section 3.1.3 [Visual/Aesthetic] Mitigation, clearance requirements for safe electrified railroad operations limit the potential for adding landscaping along the Caltrain right-of-way, so JPB will attempt to maintain the existing vegetation screening insofar as possible, *as part of a Vegetation Management Plan as described in Sections 3.1.3 [Visual/Aesthetic] and 3.4.3 [Biological Resources]*. Text has been added to the Revised EA/EIR to state that any new planting will be considered in coordination with local property owners and the appropriate city and county urban foresters. Table S-1, the Summary of Long-Term Impacts and Proposed Mitigation Measures has been modified to include this consideration as well.

**17.2.3 City of Brisbane, Michael Barnes, Mayor, May 12, 2004**

"...we also recognize that the aesthetic impact from the overhead contact system, along such a lengthy corridor, may be somewhat more significant than the document suggests. On the other hand, we acknowledge that this aesthetic impact may be a necessary trade-off for the substantial benefits from the project."

**Response 17.2.3** Please see response to Comment 17.1.1.

**17.2.4 City of Menlo Park, Kent Steffens, Director of Public Works, May 25, 2004**

"Regarding visual impacts, it seems certain that many in Menlo Park will consider the prospect of catenary wires, insulators, support poles and mast arms, portal support frames in the station areas and higher poles and wires for the distribution system unsightly. And because the impacts of tree removal associated with the project have not been clearly documented in the DEIR (see point above), it is evident that the visual impacts are likely to be more extensive than analyzed in the DEIR. To be a fair indicator of likely visual impact, the DEIR needs additional photo-simulated views that combine the effects of introduction of the electrification overhead gear together with those of the project's tree removal effects. Tree planting and other landscape treatments should be considered as mitigation for the visual impacts created by the project.

**Response 17.2.4** Section 3.1, Aesthetics, of the EA/EIR acknowledges that the introduction of OCS infrastructure adds to visual clutter along the Caltrain corridor and may be considered as an adverse effect by residents and business occupants. It is also true, however, that existing transportation facilities, including active railroad tracks, ancillary structures, area freeways and roadways, are the dominant visual elements in the context of an existing railroad corridor, and that the railroad uses pre-date nearly all of the development that presently exists.

The JPB does not contemplate large-scale tree removal. As the EA/EIR states in Section 3.1.2.2 [Visual/Aesthetic Impacts of the] Electrification Alternative on page 3-4, trees and other mature vegetation would need to be trimmed to enable placement and safe operation of OCS poles and wires. All tree trimming would occur on the railroad right-of-way side of the corridor. It is not anticipated that this would require or result in large-scale removal of trees. The trees to be trimmed would be those that currently lean into or hang over the clearance envelope for safe electrified operations. Tree trimming would be conducted in accordance with Caltrain right-of-way maintenance practices and arboricultural industry standards. As stated in Section 3.1.3, [Visual/Aesthetic] Mitigation, because clearance requirements limit the potential for new planting along the Caltrain right-of-way, any replacement will have to be considered on an individual basis and JPB will attempt to maintain existing mature vegetation insofar as possible. *These measures are included in the recommended mitigation measure for development of a Vegetation Management Plan as described in Section 3.4.3 [Biological Resources]*.

JPB engaged a certified arborist to determine the extent of tree trimming that would be required to comply with PUC clearance requirements. As reported in Section 3.4.2 [Biological Resources]

Impacts, the majority of trees and other vegetation that would require trimming are eucalyptus, oleander and other windrow species; some coast live oaks and other native and horticultural species are also present. The arborist also assessed the condition and age of the trees and recommended that those trees identified as either dead, dying, leaning, or over-mature be removed because of the potential for them to fall over, regardless of the project. This information is presented to property owners who may want to consider such action. The JPB does not intend wholesale removal of any trees. JPB believes that evaluating potentially affected trees on an individual basis to determine the best course of action for each is a better approach. It is JPB maintenance practice to comply with PUC requirements by trimming trees and other mature vegetation from adjacent properties that lean or hang over or into the Caltrain right-of-way.

The arborist's report evaluated potential impacts for eight survey sites where dense tree canopy exists and the community is potentially very sensitive to reduction in the vegetative screening along the railroad alignment. The arborist estimated that impacts to trees in the Menlo Park survey area could be minimized or avoided by judicious pole placement.

It was not feasible for the environmental document to provide simulations of visual changes at every location along the corridor, so locations were selected that were representative of the numerous corridor locations that are proximate to residents (termed sensitive visual receptors in the analysis). *Thirteen* simulations are presented in Section 3.1, Aesthetics. These include locations with dense, moderate or no vegetative screening, locations containing some or no other transportation facilities, and locations with elevated structures in the right-of-way. The simulations of the new OCS infrastructure in these locations include the effects of tree trimming.

Please also see the response to Comment 17.1.1.

**17.2.5 Redwood City, Planning & Redevelopment, Gary Bonte, Associate Planner, May 19, 2004**

"Thank you for the opportunity to review and comment on the draft EA/EIR on the proposed Caltrain Electrification Program. The following are comments and concerns regarding the electrification, potential impacts as they might pertain to Redwood City, and recommended mitigation.

"The Caltrain line passes through Redwood City's Downtown area. Efforts are underway to make the Downtown a destination point incorporating employment, retail and entertainment. There are also plans to encourage new higher-density residential development in and around the Downtown area, some of which would be located near the Caltrain tracks, particularly near the station site. A substantially improved Caltrain service could complement the attractiveness of Redwood City's Downtown area, and electrification would. reduce noise and elimination of diesel exhaust fumes from passing trains, enhancing the development potential of the area adjacent to the rail line. However, a poorly designed overhead catenary system could counteract the environmental and transportation benefits that electrification can provide.

**"Aesthetic Impacts**

"Both the Planning Staff and the Architectural Review Committee have looked at the proposed electrification system and have the following concerns and recommendations.

- "Planning Staff is recommending the use of center-pole construction as shown in Figure #2.3-1. If this is not feasible, side-pole construction is the second choice. In addition, the pole foundations should be designed to be flush with the ground rather than the exposed concrete foundations as shown in Figure # 2.3-2
- "The drawings and photosims show the poles supporting the catenary and feeder cable. What is the likelihood that these poles will also be used to support other lines such as fiber optic cables, signal circuit cables, high- voltage transmission lines, etc? The addition of other cables and wires could contribute to overall visual clutter.
- "Undergrounding existing overhead utilities that are in proximity to the rail line combined with a landscaped buffer made up of appropriate tree species could reduce the visual impacts of the



overhead electrification. Undergrounding overhead utilities would be preferable to installing taller poles to raise the height of the utility lines for sufficient clearance above the overhead catenary.

- “Although no specific designs have been proposed, there are plans to make additional improvements to Redwood City's Caltrain station. This may include an architectural feature such as a roofed-over structure that would enhance the identity of the station area, making it an attractive focal point within the Downtown area. Whatever design may eventually be selected should integrate the structure with the electrification hardware. In Europe, where overhead railroad electrification is in common use, stations have been designed to integrate the electrification support system with the design of the station structure.”

**Response 17.2.5** Thank you for your suggestions regarding OCS design treatments. As stated in the EA/EIR, Table S-1, Aesthetics, the JPB will coordinate with local jurisdictions to incorporate aesthetic treatments for the OCS poles. The JPB will also coordinate its designs for OCS infrastructure with Redwood City's plans to improve its Caltrain station as a focal point for the downtown area.

Two-track centerpole construction can be implemented only where there is a long stretch of track with sufficient lateral clearance between the track centerlines. Sidepole construction is employed typically for either single track or two track alignments, as shown in EA/EIR Figure 2.3-2. For 4-track segments, where the track centerline spacing is limited, either headspans or portals are normally employed, as shown in Figures 2.3-3 and 2.3-4. If the track centerline spacings are large enough for a reasonable distance along track, two centerpoles or two sidepoles plus one centerpole could be used for a four-track section. The critical factor in support structure selection is the track center spacing; however, track alignment geometry is governed by a number of factors, not least of which is available right-of-way width. In order to minimize potential corrosion of the pole/foundation anchor bolts, the top of foundation is usually finished about six inches above surrounding ground level.

There are no plans to hang anything other than the electrification wires and cables on the OCS poles, and the poles will be designed for standard electrification loads. If additional elements are contemplated at some time in the future, the JPB would consider the need for additional visual impact analysis at that time.

Undergrounding of crossing or parallel utility lines would be coordinated with the respective utility and would certainly avoid increasing the height of the existing aerial infrastructure, but undergrounding would be considerably more expensive and would have to be assessed on a site specific basis in conjunction with the City's plans.

As noted in the comment, support arrangements for the OCS can be easily integrated into the new station structure design, if the City plans to roof over the station area. This has been done in many places around the world but would require close coordination between the station designers and the electrification system engineers.

**17.2.6 City of Santa Clara, Geoffrey Goodfellow, Director Planning and Inspections, May 25, 2004**

“...Section 3.1 of the EA/EIR discusses the aesthetic impacts of the proposed project on the visual character of the Caltrain Corridor to sensitive visual receptors and scenic views. In the City of Santa Clara, the Caltrain Corridor is located adjacent to residential, public open space, institutional, industrial and office uses. The Santa Clara Caltrain Station is an historic depot that is listed on the National Register of Historic Places. The proposed project would be visible by the residents, recreational users, students, and business occupants within the view corridor of the rail alignment. The proposed Program may have a potentially significant impact on sensitive visual receptors and scenic views within the City of Santa Clara and should be evaluated for aesthetic impacts in the environmental analysis. A discussion of the impacts posed by the overhead contact system and overbridge protection structures to sensitive visual receptors along the corridor and scenic viewshed surrounding the historic train station should be included in Section 3.1.1.2 of the document.”

**Response 17.2.6** As reported in Section 3.5.4.2, Historic Architectural Resources Impacts, of the EA/EIR, the potential impact of the Electrification Program Alternative on historic resources was carefully considered and approaches were modified to ensure that design and construction treatments would have no adverse effect on such resources (page 3-45). The visual impact on the historic Santa Clara Caltrain station was carefully evaluated in consultation with the Covenant Representative of the South Bay Historic Railroad Society. Alternative OCS pole locations were discussed and it was determined to place the pole foundations nearest the historic station and amongst other modern installations to minimize the effect on the station's setting; *consultation will be conducted with the historic covenant holder from State Historic Preservation Office (SHPO)*. A visualization of the historic station with the OCS infrastructure in place is provided in the EA/Draft EIR in Figure 3.5-2. These impacts are discussed in the context of Section 3.5, Cultural Resources and the Addendum Finding of Effect, Caltrain Electrification Program, 2008.

Findings of Effect reports were prepared in accordance with Advisory Council on Historic Preservation guidelines to assess effects on the Santa Clara station and 23 other historic resources along the Caltrain corridor. In letters dated December 9, 2002, and July 15, 2003, the State Historic Preservation Officer concurred with FTA's determination that the project would have no adverse effect on any of the historic resources. Copies of these letters are provided in Appendix C of the draft and final environmental document.

Please see response to Comment 17.2.1 and 17.2.4 regarding the evaluation of aesthetic impacts at representative locations along the Caltrain corridor in the environmental document rather than attempting to evaluate effects for each individual community.

**17.2.7 City of Sunnyvale, John Howe, Mayor, May 12, 2004**

“...The City of Sunnyvale has completed its review of the Environmental Assessment/Draft Environmental Impact Report for the Caltrain Electrification Program. The City has identified the following issues that shall be addressed in the Final Environmental Impact Report/ Environmental Assessment.

“1. Overhead Wire System (OCS) Visual Impacts:

“In Section 2.3.2.1, the penultimate paragraph describes the portal alternative as more visually intrusive, however, this may be regarded as a ‘matter of taste’ conclusion. The trade-off seems to be that the headspan poles and span-wire catenary wires are much taller than the portal, while the portal is lower but includes a much heavier type of construction for the horizontal structural member.

“The City prefers a portal configuration as the basic approach. Using colored poles as mentioned in the report as mitigation (Section 3.1.3, second paragraph), so that coloring might also be considered for portals is preferred. Headspan poles are too tall to camouflage effectively with trees, but tree planting (also mentioned in Section 3.1.3) might do some good near a portal. Graphic studies to

enable envisioning specific OCS implementation in Sunnyvale in advance shall be conducted in order to assess visual impacts of the mitigated conditions.

"The City believes more attractive architecturally-designed portals should be developed for use near Sunnyvale Station as well. In addition, the City requests that any additional overhead wire complexity, such as overlaps, be avoided or relocated away from Sunnyvale downtown or the Sunnyvale Caltrain station. There shall be a separate design task involving interaction with City staff which consists of a detailed design review for aesthetics to weed out any superfluous complexity and clutter that creeps into the final design details. Section 3.1.3 promises under "Mitigation", second paragraph, that the Joint Powers Board, "(JPB) will coordinate with local jurisdictions...to develop design guidelines to minimize visual effects." The final design should aspire to simplicity, uniformity, symmetry, etc.; and these objectives and their implementation and enforcement should be made obligatory on the JPB and its designers and construction contractors.

"A feature shown in Figures 2.3-1, 2.3-2 and 2.3-3 is an underground duct bank for "miscellaneous cables." If an underground duct bank is contemplated, the overhead feeders shall be located there as well. This would be more important if there ends up being a need for more than the two overhead feeders as shown and as described in Section 2.3.2.2, last paragraph."

**Response 17.2.7** Thank you for your suggestions regarding OCS design treatments. As stated in the EA/EIR, Table S-1, Summary of Long-Term Impacts and Proposed Mitigation Measures, Aesthetics, JPB will coordinate with local jurisdictions to incorporate aesthetic treatments for the OCS poles. The response to comment 17.2.5 provides particulars regarding the placement of different OCS configurations. JPB has identified headspans as the preferred OCS arrangement for multi-track segments of the line.

The electrification design proposes two 25 kV overhead feeder lines. One of the primary advantages of this 2x25 kV auto-transformer system design is the minimization of EMI /EMF effects due to the opposing current flows in the parallel aerial feeder conductors. Placing these conductors in a duct bank would require that they be configured as insulated cables. A single duct bank is envisaged, as shown in the Typical Sections and would be located on one side of the right-of-way. Since there could be other cables in the duct bank in close proximity to these 25 kV feeders, the 25 kV cables would have to be shielded to prevent interference effects on the other cables. Positioning the feeders on one side of the alignment, underground in a shielded cable configuration would eliminate the EMI / EMF benefit and interference effects would increase. In addition, underground cabling is approximately 2.5-to-3 times more expensive than aerial bare conductor installation, so there would be a substantial additional capital cost. Given the disadvantages of locating the feeder lines in a duct bank and the advantages in having them overhead, it is not recommended that the design be changed to place feeder lines in the duct bank.

#### **17.2.8 Bay Rail Alliance, Margaret Okuzumi, May 25, 2004**

"...Lastly, we'd like to emphasize the huge benefit that electrification will provide to neighbors of the line. While some are concerned about aesthetic impacts, we'd like to point out that rarely will people be gazing directly at the lines and that mostly they will be hidden by trees, buildings or other objects. In our experience, people become oblivious to the presence of telephone wires, light rail and electrified trolley wires as they blend into the visual landscape. Also, we feel that the huge reductions in noise and air pollution that electrification would provide are significant benefits that should not be overlooked by neighbors."

**Response 17.2.8** Comment noted.

#### **17.2.9 Felton Gables Homeowners Association, Robert P. Kelly, President, May 25, 2004**

"This evening (25 May 2004) I attended a meeting of our homeowners association where the subject of electrifying the train system runs from San Francisco to San Jose was a major agenda item. At this meeting I became aware that today is the deadline for submitting comments to you concerning this subject. As the newly elected President of the Felton Gables Homeowners Association, I feel

obligated to express a grave concern over the current plan. In effect, this plan will have a direct negative impact on our neighborhood, which abuts the train tracks in Menlo Park. The loss of trees and the general ugliness of an overhead superstructure is considered unacceptable by me and all others that attended our meeting. Our homeowners organization is comprised of over 180 adult residents. I am confident, if sufficient time was available, all 180 would respond in the manner that I have. We hope that Caltrain will develop an alternate solution that is compatible with our environment.”

**Response 17.2.9** Please see response to Comment 17.1.1, 17.2.1, and 17.2.4.

**17.2.10 League of Women Voters of San Mateo County, Linda Craig, County Council Coordinator, Judy Orttung, Onnolee Trapp, Transportation Co-chairs, May 1, 2004**

“...Aesthetic/Visual Impacts vs. Image

“We do not agree that the Aesthetic/Visual Impacts, which local residents or business occupants may consider adverse, will be sufficiently balanced by decreases in noise and air emissions to be considered an offset that would warrant a statement that the project would not introduce visual elements that are out of character for the neighborhood. Since there will be tree trimming and removal in some areas, exposure to noise and emissions could be more significant for these parts of the Right of Way than for other locations, in addition to the impact of newly added “visual clutter” due to the new poles and wires. The more modern “image” of the train becomes a triviality in this situation.”

**Response 17.2.10** Please see responses to Comments 17.1.1, 17.2.1, 17.2.4 and 17.2.8.

**17.2.11 Andrew Cigolie, May 4, 2004**

“As far as OCS being unsightly, yes, some effort needs to be done to keep the ‘sight lines as clean as possible,’ but this strikes me as a bit NIMBY thinking when neighbors say they don’t want it used. Perhaps some analysis around the cost difference of 3rd rail vs. OCS would help so folks understand that their taxes would need to go up to pay for this option.”

**Response 17.2.11** Please see response to Comments 17.1.1, 17.2.1 and 17.2.8 regarding visual impacts and general response: OCS and Third Rail Power Distribution.

**17.2.12 Todd Clobes, May 25, 2004**

“I have read the electrification plan for Caltrain and completely agree that this project is worthy, cost effective, and should move forward as soon as possible. Please do not bow to the small but vocal opponents (specifically those in Atherton) who do not see the merits of increase service, quieter trains, and less pollution. A few wires and losing some trees along the Caltrain right of way is a small price to pay for the many benefits of this project.”

**Response 17.2.12** Comment noted.

**17.2.13 Martin Engel, May 25, 2004**

“I oppose the plan to electrify the Caltrain commuter system. Here’s why:

“...The overheads for electrification are profoundly destructive of the >aesthetic environment. They pollute visually.

“...Trees will be cut down in vast number. Electrification will (contribute) convert the Peninsula into a concrete, industrial wasteland.

“...The railroad bureaucracy is bent on converting the entire Peninsula to a railroad right-of-way. Electrification is one step on that path.

**Response 17.2.13** Please see responses to Comments 17.1.1, 17.2.1 and 17.2.4.

**17.2.14 Patti Frazier, May 26, 2004**

"I object to the overhead electrical wires."

**Response 17.2.14** Comment noted.

**17.2.15 Stephen Hamilton, May 1, 2004**

"Burlingame Avenue station is the only registered historic building in Burlingame and forms a visual anchor for the Burlingame Avenue area. We need a visual simulation of the OCS of this historic and visually important location."

**Response 17.2.15** Please see the response to Comment 17.2.6. Effects on the historic Burlingame Station were carefully evaluated as reported in Section 3.5, Cultural Resources, of the EA/Final EIR; see Table 3.5-3. *Qualified architectural historians have determined that the placement of OCS poles near existing historic stations will not have an adverse effect on properties that are listed in or qualify for listing in the NRHP.* Consultations regarding the placement of OCS infrastructure in the station vicinity were conducted with the Covenant Holder for the South Bay Historical Railroad Society, and a Finding of Effects report was prepared and submitted to the State Historic Preservation Officer (SHPO). A copy of the SHPO's letter concurring with the finding that the Electrification Program would not have an adverse effect on the Burlingame station was provided in Appendix C of the EA/EIR.

Thirteen separate visualizations for locations that represent the various types of resources and locations were provided. Please see response to Comment 17.2.1.

**17.2.16 Stephen Hamilton, San Carlos Hearing Speaker, May 1, 2004**

"I'm a Burlingame resident, and I apologize if I sound parochial but I do want to pick up on a point that Beth raised earlier, and that is visual impact. The Burlingame Avenue Station is a visual anchor of Burlingame, of the Burlingame Avenue area. I was unable to find any visual simulation of what the OCS system would look like in Burlingame and I would like to echo the point that Beth raised that the visual impact is very important for those stations that are, in fact, most of the stations that are on this right-of-way, to have a visual simulation of the OCS and I would like you to do that, certainly for Burlingame but also for the other stations that are visually important."

**Response 17.2.16** Please see the response to Comment 17.2.15 regarding the visual effects on the Burlingame Station.

**17.2.17 Nick Kibre, May 13, 2004**

"Some people have complained that overhead wires will spoil their views, but I wanted to let you know that some of us think catenary is beautiful!

"And I would think that those who don't share this point of view would still be happy to trade some visual clutter for a huge reduction in noise."

**Response 17.2.17** Comment noted.

**17.2.18 Paul Lund, San Carlos Hearing Speaker, May 1, 2004**

"...And third point is about the impact to people living along the rail line. Personally, I find the aesthetics of overhead contact wires to be very miniscule. The downside of a minor bit of overhead wire is so small compared with the diesel fumes that you experience and the noise, living next to it, and I would bet that people living in areas of the country that currently have electrified lines would object just as strongly as some of the people who are objecting to the overhead wires—or far more

so—because they would not want the diesel pollution and the noise of reverting to old-fashioned diesel propulsion.”

**Response 17.2.18** Comment noted.

**17.2.19 Robert Olton, May 14, 2004**

“It’s UGLY! Electrification would paint a huge swath of ugliness all up and down the peninsula, and have a terribly NEGATIVE environmental effect on the visual environment. I live in Belmont, and we have just spent millions of dollars to put wires and etc. underground; As a result the Caltrain station has become the centerpiece of downtown Belmont. In contrast, this proposal would involve putting wires back up again and looking really UGLY.

“...We oppose the Caltrain Electrification Program because:

“4. It is ugly – we just spent millions of dollars to put wires underground; this project reverses all that and has a huge negative effect on the visual environment.”

**17.2.20 Judith M. Oranasu, Ph.D., May 25, 2004**

“The overheads for electrification are profoundly ugly; they pollute visually.”

**Response 17.2.19 & 17.2.20** Please see the responses to Comments 17.1.1 and 17.2.1.

**17.2.21 Beth Pierson, San Carlos Hearing Speaker, May 1, 2004**

“I just wanted to respond to page S-10 of draft report. The summary of long-term impacts and proposed mitigation measures where it says, “...the changes would not introduce elements that would be out of character with existing land uses or obscure a scenic view or vista.” I speak as both a Caltrain rider for a number of years and a neighbor of Caltrain for a number of years, that the pictures that are shown in the report would obstruct the views from the ground from where I live, especially San Carlos. This is substantially true for the over grade separation areas where the wires would be raised above surrounding community. Also, in a number of communities especially San Carlos, but also I’m thinking of San Mateo and Burlingame, the train station is really a centerpiece for the downtown, it’s kind of a gateway to the downtown and surrounding community and the visual impact of these wires should not be minimized, especially when you’re looking at the centerpiece of downtown. And one last issue that is not addressed in the report, is not only the views from the surrounding areas but also the views for riders and users of the trains, both from the stations themselves and as you’re arriving on the train and looking out the windows, we get great views, it’s really a very pleasant ride, and I would not like to see that diminished. In summary, we presently have, the stations are a very user-friendly and welcoming environment; it draws people from the surrounding areas and works to draw people from the trains into the downtown areas and I think that would be substantially impacted in a negative way by the kinds of illustrations that are shown in the report.”

**Response 17.2.21** Figure 3.1-5 provides a simulation of the San Carlos Station with OCS poles and wires in place. Since the station is already elevated, there would be no additional obstruction of views from the ground in San Carlos particularly. The other visual simulations depict how the OCS infrastructure would look in other typical locations along the Caltrain corridor. Please also see the responses to Comments 17.1.1 and 17.2.1.

**17.2.22 Jack Ringham, San Carlos Hearing Speaker, May 1, 2004**

“...Also, I thought that the EIR greatly minimized the visual impacts that would be perceived and I feel that most people that live along the corridor would not agree that there is no visual impact. I think the visual impacts are very significant.”

**Response 17.2.22** Please see the response to Comments 17.1.1 and 17.1.2.

**17.2.23 Arthur Ringham, May 03, 2004**

“Although the EIR claims many benefits of electrification, it is obvious that the overhead wires and related supports of the OCS would create a permanent eyesore along the entire Caltrain corridor. The current trend in many cities is to require the undergrounding of utilities with new construction to reduce visual pollution. The OCS would be a major step backwards from the standpoint of visual impact. The EIR goes out of its way to deny and downplay negative visual impacts of the OCS and makes misleading claims about mitigation of negative visual impacts with landscaping and screening. Many of the photographs in the EIR related to visual impacts appear to have been carefully staged or selected to create the impression that negative visual impacts are less than reality. These blatant attempts to mislead the reader raise doubts about the objectivity and credibility of the entire EIR. Rather than deny negative visual impacts the EIR should admit them as a price to be paid for benefits of electrification.

“In any event every effort should be made to avoid the ugly overhead wires.”

**Response 17.2.23** Please see the response to Comments 17.1.1 and 17.1.2.

**17.2.24 Francis Wong, May 14, 2004**

“Para 3.1.3, page 3-17. Visual impact of the OCS structures could be mitigated through use of “self protecting” oxidizing steel instead of galvanized steel. Also, judicious location of trees and shrubbery can further reduce the visual impact of the OCS poles.”

**Response 17.2.24** Comment noted. As recommended in the comment, and stated in the EA/EIR in Table S-1, Summary of Long-Term Impacts and Proposed Mitigation Measures, *different* types of OCS structures along with mitigation measures that would reduce the visual impact of the OCS will be considered during the final design process in coordination with the local jurisdictions.

**17.3 VISUAL IMPACTS OF OVERBRIDGE PROTECTION BARRIERS**

**17.3.1 City of Sunnyvale, John Howe, Mayor, May 12, 2004**

“3. Overbridge Protection Barriers: These are proposed for retrofit to existing bridges crossing Caltrain to preclude objects from falling or being thrown onto the OCS wires. In Sunnyvale, overbridge protection barriers would be installed (see Table 2.3-2) on the Mathilda Avenue, Wolfe Road and Lawrence Expressway overheads and on two pedestrian overheads. These shall be constructed to be aesthetically unobtrusive, and in the case of the Mathilda Avenue bridge, shall meet the City’s goals and objectives for design of this bridge to be an architectural gateway to downtown Sunnyvale.

“The City is in the design stage of a rehabilitation project for this bridge which will incorporate architectural features to promote the gateway aspects of the bridge. The overbridge protection barriers for Caltrain electrification shall be designed to harmonize with the architectural features of the Mathilda Avenue bridge, and minimize the aesthetic impact on the bridge.”

**Response 17.3.1** Comment noted. During the final design process Caltrain will work with local agencies on the design of electrification elements within their jurisdiction.

**17.4 VISUAL IMPACTS OF TREE PRUNING OR REMOVAL**

**17.4.1 Santa Clara VTA, Roy Molseed, Sr., June 30, 2004**

“Page 3-17: The discussion of mitigation measures indicates JPB will ‘consider’ replacement of trees, including potentially, heritage or other significant trees. There should be a stronger commitment to do so.”

**Response 17.4.1** Paragraph two, Section 3.1.3 of the EA/EIR states that *"The feasibility of landscaping mitigation will be considered in the context of required safety clearances from the poles and wires. If trees not on Caltrain right-of-way are damaged or must be removed as a result of trimming undertaken by the JPB for placement of OCS or TPS equipment and facilities, replacement will be considered on an individual basis. Such replacement will be planned in coordination with the property owner and appropriate city and county urban foresters."* As described in Section 3.4.3, a *Vegetation Management Plan* will be developed in consultation with a certified arborist to minimize impacts to trees and other mature vegetation. It is not anticipated that the tree trimming will result in removal of large numbers of trees, however, those that are structurally weak or over mature may be adversely affected. Please see the general response: Tree Trimming, and the response to Comment 17.2.4 for particulars regarding the proposed tree trimming and anticipated impacts.

#### **17.4.2 Town of Atherton, Kathy McKeithen, Mayor, May 20, 2004**

"The Town of Atherton has reviewed the Draft EA/EIR for the Caltrain Electrification Program. Our staff, our Caltrain Subcommittee, and our City Council have the following comments:

"Heritage or significant trees

"Page 3-17 states that no adverse impacts are anticipated to heritage or significant trees. However, Page 3 36, in section 3.4.1.4 states that some trees and mature screening may encroach into vertical and horizontal clearances for installation and safe operation of electrical wires. Section 3.4.2.2 states that a certified arborist assessed the corridor, that overhanging branches would need to be trimmed, and further states that this information would be available to assist property owners to comply with PUC requirements.

"These PUC requirements only come into effect because of the construction of this project; therefore the impacts of these requirements are impacts of this project and should be identified in detail. The specific clearance requirements and the distance that the trees would need to be removed needs to be shown in the document. Failure to identify these critical clearances is a major oversight. In addition, according to a comment made by Caltrain staff, the corridor is intended to be upgraded to four tracks, but this track section is not mentioned in the EA/EIR. The more significant impacts of a wider track section on tree clearances needs to be disclosed in the EA/EIR.

"There are a considerable number of mature and heritage trees along the corridor, especially in the Town of Atherton, that will be impacted by the project. The project needs to identify these impacts. We were very surprised to learn, essentially by accident, that a Tree Survey and Assessment Report had been prepared which details the impact upon trees in Atherton. It was only because of an inadvertent disclosure that we were able to hear of, and to obtain a copy of, this Report. The Report should be included as an integral part of the EA/EIR. The impact to trees also relates to the visual impact. The visual impact section states that existing screening will minimize the impact. But the tree section states that some of the screening trees will need to be removed. This is a contradiction and creates a significant impact that must be addressed.

"The Town of Atherton has a tree protection ordinance and permit requirements for removal of trees. Table 1.5-1 incorrectly states "No permitting requirements identified" for the Town of Atherton. The Environmental Checklist, page A-3, under item IV (e), regarding conflict with local policies or ordinances shows "No Impact." However, the project arborist consulted with the Town Arborist and determined that permits would be required for removal or extensive pruning of heritage trees, and that removal or extensive pruning (greater than 25%) of heritage trees conflicts with Atherton tree protection policies. A considerable number of the trees shown to be removed are heritage trees, and some of them are heritage oak trees, a species of special concern in Atherton and along the corridor.

"On page 3-36, Section 3.4.1.4 states that "Potential project impacts on such vegetation were therefore considered." but the significant impact of removal of 80 trees within Atherton, and of 1,727 trees in total, was considered to be "No Impact". It is not possible that the removal of this many trees has "No Impact," especially within the Town of Atherton where 26% of the screening trees are being removed, and a larger undisclosed percentage are being pruned, possibly drastically pruned.



"Finally, regarding tree removal and pruning, the DEA/EIR implies on page 3-37 that property owners will be required to remove or prune their trees to comply with PUC requirements, and that the JPB "will coordinate with the property owners if the need arises." This is not an acceptable means to deal with this significant project impact.

"When the JPB constructs a project that will impact private trees, many which have been overhanging the tracks for decades, the JPB needs to include in the project all tree work required, and identify this work as a project impact. The EIR should also address the need for condemnation actions to remove valuable trees on private property, and address the potential for diminution of property values due to removal of screening adjacent to the rail corridor."

"...Please address the above comments in your Final EA/EIR, and advise us of what action you propose to avoid or mitigate the dramatic tree and visual impacts to the Town of Atherton. If these impacts can be neither avoided nor mitigated, the JPB is required to make a finding of overriding considerations before proceeding with the project. Thank you for your consideration."

"...Avoidance or Mitigation

"...The DEA/EIR should address what alternatives have been considered to avoid or mitigate the anticipated significant impacts as noted above and in the report. One alternative that could reduce some of these impacts would be to move the two tracks through Atherton and other communities as close to the center of right of way as possible, such that the required clearances will remove less trees, and reduce the pruning impacts to many others."

**Response 17.4.2** Please also see general response: Tree Trimming and response 17.4.5.

The general clearance requirements for the poles and wires were presented in Section 2.3.2.2, Overhead Contact System, in the EA/Draft EIR that was circulated. This information was used to evaluate the potential impacts of tree trimming as presented in Section 3.4.2.2, [Biological Resource] Impacts—Trees and Other Mature Vegetation. It is impossible to report on specific trees until the final design phase when actual pole placements will be determined. JPB will coordinate with affected property owners when that information is available and prior to any actual trimming. *A Vegetation Management Plan will be developed in consultation with a certified arborist to minimize impacts to trees and other mature vegetation. If trees not on Caltrain right-of-way are damaged or must be removed as a result of trimming undertaken by the JPB for placement of OCS or TPS equipment and facilities, replacement will be considered on an individual basis. Such replacement will be planned in coordination with the local property owner and the appropriate city and county urban foresters.*

Please also note that four-tracking of the Caltrain alignment is not part of the Electrification Program and therefore is not evaluated in this environmental document.

JPB engaged the services of a certified arborist to evaluate the extent of tree trimming that would be required to comply with PUC requirements. The arborist's report (HortScience, Tree Survey and Assessment, 2003), is cited in the circulated EA/EIR and it was listed among that document's technical references in Appendix E. Based on a survey and videotape of both sides of the entire corridor, the arborist determined that Atherton was one of only eight mile-long segments (8 percent of the 102 mile-long segments bordering both sides of the 51-mile-long corridor) where dense tree canopy exists. Thus, it was evaluated for impacts.

The arborist identified trees that were over-mature, dying, dead, or leaning and recommended that these trees be removed; the arborist therefore reported a "high" level of impact in the Atherton area. JPB does not contemplate removal of trees not on Caltrain right-of-way. However, as stated in the environmental document, the information on the condition of trees was made available to property owners who may want to consider such action. In Atherton, as elsewhere along the entire alignment, JPB complies with PUC requirements by trimming trees and other mature vegetation that lean or hang over or into the Caltrain right-of-way from adjacent properties.

JPB does not intend to remove heritage trees. The arborist reported (p.15 of the Tree Survey and Assessment) that in Atherton, along the east side of the track, there are several trees on private property that encroach into the Caltrain right-of-way. The arborist stated that "the valley oaks, coast

live oaks, and coast redwood trees can be pruned.” These tree types may include heritage trees, and they would be trimmed if they encroach into the necessary clearance for the electrical wires. The arborist took a different approach to fast growing, overmature Monterey pines with large branches hanging into the right-of-way. Because these particular trees had a short span of life remaining and a high risk of falling into the right-of-way, the arborist recommended their removal. As stated in responding to the Atherton Tree Committee (see response 17.4.5), JPB concurs that evaluating potentially affected trees on an individual basis to determine the best course of action for each is a better approach.

The project arborist did consult with the Atherton Town Arborist and reported her general concurrence that many trees were overmature and/or possessing structural defects that might lead to failure, regardless of the project. The project arborist's report does not mention the Town Arborist's stating that permits would be required for removal or extensive pruning of these trees. JPB has consulted further with the Town Arborist to clarify permit requirements. The text in Table 1.5-1, *Permits and Approvals Anticipated to be Required*, and Section 3.1.2.2 [Visual/Aesthetic Impacts of the] Electrification Program Alternative, of the EA/Final EIR has been revised to state the specific requirements pertaining to trees in Atherton's jurisdiction. JPB intends to conduct the necessary tree trimming in accordance with arboricultural industry standards and applicable tree ordinances. This would avoid substantial adverse effects to heritage trees.

Given that substantially adverse impacts are not anticipated from tree trimming, mitigation measures such as relocating tracks closer to the center of the right-of-way do not appear warranted.

#### **17.4.3 City of Menlo Park, Kent Steffens, Director of Public Works, May 25, 2004**

“The project's impact on trees in and near Menlo Park is not sufficiently clear. We understand that there is a detailed arborist's report, but that report has not been directly incorporated in the document. If the content of the arborist's report concerning tree loss in and near Menlo Park is as has been reported in the press (eight to twelve trees at the San Francisquito Creek crossing, fifteen to twenty-two of the fifty-six trees along the tracks in Menlo Park and twenty-five percent of the trees along the tracks in nearby Atherton slated for removal), the DEIR's conclusion of “no permanent impacts” to biological resources may be incorrect. We suggest that this area of the analysis be thoroughly reconsidered, that more specific detail be provided in the report and that consideration be given to transplanting trees rather than removing them. We would also suggest that planting new trees be given consideration as mitigation for the loss of existing trees.”

**Response 17.4.3** Please see the general response: Tree Trimming and the specific responses to Comments 17.2.4 and 17.4.2. The arborist's report was incorporated into the EA/Draft EIR that was circulated and it is cited among the document references in Appendix E.

JPB engaged a certified arborist to evaluate the tree trimming that would be required to comply with PUC clearance requirements. Clearance requirements are generally described in Section 2.3.2.2, Overhead Contact System, of the EA/EIR, and this information was used to evaluate tree trimming effects. As reported in Section 3.4.2 [Biological Resources] Impacts, the majority of trees and other vegetation that would require trimming are eucalyptus, oleander and other windrow species; some coast live oaks and other native and horticultural species are also present. The arborist also assessed the condition and age of the trees and recommended that those trees identified as dead, dying, leaning, or overmature be removed because of the potential for them to fall over, regardless of the project. This information would be provided to property owners who may want to consider such action. The JPB does not intend to remove trees on private property. It is JPB maintenance practice to comply with PUC requirements by trimming trees and other mature vegetation that hang over or lean into the Caltrain right-of-way from adjacent properties.

The EA/EIR acknowledged the potential for trees not on Caltrain right-of-way to be damaged from tree trimming. Detailed information regarding specific trees will not be available until the design phase when specific pole placements are determined, and JPB will coordinate with private property owners if necessary at that time. As stated in Section 3.4.3, [Biological Resource] Mitigation, because PUC clearance requirements and right-of-way constraints limit the potential for new planting along the Caltrain right-of-way, any replacement would be considered in coordination with local

property owners on an individual basis. To minimize impacts, JPB will conduct all tree trimming in accordance with arboricultural industry standards to maintain existing mature vegetation insofar as possible. *These measures will be included in a Vegetation Management Plan to be developed in consultation with a certified arborist.*

**17.4.4 Yuriko Kishimoto, Palo Alto City Council, Sunnyvale Hearing Speaker,  
April 24, 2004**

"Third question is on the tree impact and estimate number of trees which have to come down, and whether Caltrain owns right-of-way to potentially replace the trees."

**Response 17.4.4** Please see the general response: Tree Trimming and the responses to Comments 17.2.4, 17.4.2, and 17.4.3.

**17.4.5 Atherton Tree Committee, Denise Kupperman, Chairperson, and Kathy Anderson,  
Town of Atherton, May 25, 2004**

"The Atherton Tree Committee has reviewed the Draft EA/EIR for the Caltrain Electrification Program and submits the following comments.

"Page 3-36, Section 3.41.4 states that there will be "No Impact" from the removal of 80 trees within Atherton, nor would there be an impact from the removal of 1,727 trees for the entire project. We challenge the assessment that the removal of 1,727 trees along the corridor would have "No Impact", and we challenge the assessment that the removal of 80 trees within the Atherton corridor would have no impact. A significant number of mature trees along the Atherton corridor are mature and include a number of heritage trees. We feel that the removal of eighty trees including a number of mature and/or heritage trees along the Atherton corridor will have a very significant visual impact and a detrimental impact on wildlife habitat, storm water runoff reduction and air quality.

"The Town of Atherton has a Heritage Tree Ordinance, Municipal Code 8.10, which requires permits for removals and prohibits "excessive pruning". Table 1.5-1 of the EIR incorrectly states that "No permitting requirements identified" for the Town of Atherton. Our Town Arborist met with the project arborist and determined that any tree over 48 inch circumference would require a permit. Additionally, healthy trees, or when grouping of more than five trees at one time on a property are being proposed for removal, the removal would be referred to the Atherton Planning Commission for a public hearing. We are also concerned about the extent of the pruning; that is being proposed. The arborist survey states the certain trees are to be "pruned", but does not identify how much pruning is required. Pruning more than 25% of a tree's canopy at one time within, a calendar year would be considered "excessive pruning" and is in conflict with our tree protection policies.

"The draft EA/EIR also states that measures to mitigate the visual impacts will be incorporated into the project design. It also states that screening landscaping may need to be removed, and that additional landscaping may not be possible due to safety clearances from the wires. This appears to be a contradiction and may create a detrimental visual impact for the community of Atherton that may not be satisfactorily mitigated. It would be helpful to understand how the visual impacts of removing landscape screening and adding overhead wires will be mitigated.

"Your arborist's survey recommends the removal of all Monterey Pine species "because of the frequent pruning that would be required to maintain the lines in a safe condition, and the resultant damage that would be done to the trees." We feel that these removals may be unwarranted depending on the actual condition of individual trees. Further identification of the trees in question may result in avoiding removal and mitigation proposals should be with these recommendations.

"Many of the trees proposed for removal are on private property and the removal could have a significant impact to the residents and their property values. We request that you communicate how these property owners will be remunerated for the loss of their trees.

"It should be noted that your tree survey failed to identify five properties that border the tracks and the trees in Holbrook-Palmer Park located along the property line that borders the tracks were not

addressed in your survey. How many trees, if any, will be proposed for removal in the aforementioned areas?

"Please advise us of what action you propose to avoid or mitigate the effect of removing 80 trees from the Atherton community. We understand the benefits train electrification would offer the larger community, and we are prepared to work with you to find mutually satisfactory solutions to the issues raised in this letter."

**Response 17.4.5** Please see the general response: Tree Trimming and the response to Comment 17.4.2 regarding potential impacts to trees within Atherton and the arborist report prepared for the Electrification Program. As explained in the response to Comment 17.4.2, the project arborist identified trees that were overmature or possessing structural weaknesses that might lead to failure, regardless of the project. JPB does not intend to remove trees that are not on JPB property. As stated in the EA/Draft EIR in both Section 3.12.2, [Visual/Aesthetic Impacts] Electrification Program Alternative, and Section 3.4.2.2 [Biological Resource Impacts] Electrification Program Alternative, trees that overhang or lean into the safe clearance envelope for electrified train operations would be trimmed, not removed. *A Vegetation Management Plan will be developed in consultation with a certified arborist to minimize impacts to trees and other mature vegetation.* We do not anticipate substantial adverse visual impacts or impacts to wildlife habitat, stormwater runoff, or air quality as a result of this trimming.

The project arborist did not report specific Atherton tree permit requirements. JPB has consulted with the Town of Atherton's Arborist regarding requirements of the Town's Tree Ordinance that would apply to the tree trimming needed to attain the necessary clearance envelope for safe electrified train operations. These requirements have been added to the text in Table 1.5-1 and to Sections 3.1.2.2 and 3.4.2.2, [Biological Resource Impacts of the] Electrification Program Alternative, of the EA/Final EIR.

As stated in the EA/Draft EIR, Section 3.1.2.2 [Visual/Aesthetic Impacts] Electrification Program Alternative, adding overhead wires in the context of an existing, active freight and passenger rail corridor would not constitute a substantially adverse visual impact. Communities *such as* Atherton possess vegetative screening along the Caltrain corridor, *which* would *remain* after the project is implemented, as JPB does not contemplate large scale removal of trees.

While JPB does not intend to remove trees that are not on Caltrain property, we acknowledged the potential for trees not on Caltrain right-of-way to be damaged or to require removal, and the EA/Draft EIR that was circulated discussed replacement for such situations. There are real constraints to replacement planting posed by safe clearance requirements and right-of-way restrictions. Therefore, the EA/Draft EIR stated in Section 3.1.3, [Visual/Aesthetic Impacts] Mitigation, that "the feasibility of landscaping mitigation will be considered in the context of required safety clearances *from poles, wires and electrical facilities.*" If trees not on Caltrain right-of-way are damaged or must be removed as a result of trimming undertaken by JPB for placement of OCS facilities, replacement will be considered in coordination with local property owners. This text has been modified in the EA/Final EIR to state that such replacement will be considered on an individual basis *and coordination with the property owner and appropriate city and county urban foresters.*

Evaluating potentially affected trees on an individual basis to determine the best course of action for each is *the best* approach. The text in Section 3.1.3 has been modified to include JPB's commitment to perform this evaluation once specific pole placements are identified during final design. Mitigation in the form of replacement planting for specific situations in the event that trees on private property are damaged or removed is discussed in the preceding paragraph. Based on the foregoing, any discussion of monetary compensation for tree removal would be premature at this time.

Regarding trees in Holbrook-Palmer Park, project staff walked the alignment in the vicinity of the park to re-assess the impact on parkland trees. It appears that one eucalyptus tree in the park bordering the Caltrain corridor is large enough to qualify for heritage tree status in accordance with Atherton's tree ordinance. This tree currently overhangs the rail right-of-way and would require trimming. JPB does not contemplate removal of this tree. Because the tree sits on the corner of the park lot, there would be visual impacts on the park from excessive tree trimming. Therefore, trimming would be

conducted in accordance with arboricultural industry standards, Caltrain right-of-way maintenance practices and Atherton tree permit restrictions to avoid adverse effects to the tree. This approach may involve trimming over a number of years, which would also reduce the visual effect. JPB would avoid conducting any more trimming than required for safe electrified train operations.

#### **17.4.6 Jeff Abramowitz, May 25, 2004**

"I'm writing to voice my opposition to the electrification plan of Caltrain. I don't believe adequate attention has been paid to the environmental issues - specifically destruction of the trees."

**Response 17.4.6** Please see the general response: Tree Trimming and the responses to Comments 17.2.4 and 17.4.2.

#### **17.4.7 Alex Alexander, May 23, 2004**

"I want to urge you to preserve the trees, as much as possible, along the tracks as you upgrade the rail service over the upcoming months and years.

"I believe in progress, but I also believe in preserving the irreplaceable trees along the railroad route.

"I know that, with care and forethought, many if not all the mature trees along the route can be preserved. I hope you will make that effort. It is easy to merely say, 'cut the trees' and let it go at that. But I also know that with some thought and planning, most if not all the trees can be preserved with no negative impact on the operation of the upgraded rail service. It may require some judicious trimming here and there, but that seems worth the effort.

"Quality of life counts for as much as efficiency...doesn't it?"

**Response 17.4.7** Please see the general response: Tree Trimming and the responses to Comments 17.2.4 and 17.4.2.

#### **17.4.8 Hamid Farzi, May 20, 2004**

"What a shame it is to consider destroying the landscape of established communities in the name of 'progress.'

"You would think that there would be a better solution to providing the upgrades we need in our public transportation system. Shame on all of us for not having thought this through 50 years ago! Who would have known.

"Lets make sure the facts are accurate, the public is properly informed of...the devastating impact on all communities, not just Atherton."

**Response 17.4.8** Please see the general response: Tree Trimming and the responses to Comments 17.2.4 and 17.4.2.

#### **17.4.9 Patti Frazier, May 25, 2004**

"I object to the loss of heritage trees along the right of way."

**Response 17.4.9** Please see the general response: Tree Trimming and the responses to Comments 17.2.4 and 17.4.2.

#### **17.4.10 Joseph Grass, May 25, 2004**

"Too many trees, including heritage trees will be uprooted in the process, including more trees that will be aggressively pruned. This will not only have a negative visual impact, but also will allow more train noise to emanate from the track area into the surrounding residential neighborhoods.

"Not enough study has been done to identify exactly how many trees will be impacted, especially in the Menlo Park part of the corridor."

**Response 17.4.10** Please see the general response: Tree Trimming and the responses to Comments 17.2.4 and 17.4.2.

**17.4.11 Linda Griffon, May 18, 2004**

"Subject: Trees in Atherton

"From what I've been reading electrification of the train tracks through my neighborhood will have a significant negative visual impact (noise ?). It would be helpful to see exactly what the electrical towers and lines will look like and what trees would be cut down. What kind of screening is Caltrain prepared to put in place? How will these neighborhoods be compensated? It is unfair to expect a few to bear the burden (and loss of property value) of what is deemed to be a public good. I'm against electrification until I have enough information to determine whether or not I would favor it. A full impact article with pictures should be published in all the local papers before you close acceptance of public comments."

**Response 17.4.11** Please see the general response: Tree Trimming and the responses to Comments 17.1.1, 17.1.2, 17.2.4 and 17.4.2.

**17.4.12 Kaaren Hanson, May 25, 2004**

"Too many trees, including heritage trees will be uprooted in the process, including more trees that will be aggressively pruned. This will not only have a negative visual impact, but also will allow more train noise to emanate from the track area into the surrounding residential neighborhoods.

Not enough study has been done to identify exactly how many trees will be impacted, especially in the Menlo Park part of the corridor."

**Response 17.4.12** Please see the general response: Tree Trimming and the response to Comment 17.4.3 and the response to Comment 17.4.11.

**17.4.13 Doug Kaufman, May 25, 2004**

"I wish to object to several parts of the EIR for Caltrain's proposed electrification plans. Eighty Heritage trees in Atherton and 20+ ?? in Menlo Park are slated to be removed. The exact number and when depends on which Caltrain plan is being implemented. An equal or greater number of trees will be 'pruned' aggressively. I strongly object to any number of trees being removed or 'pruned.'"

**Response 17.4.13** Please see the general response: Tree Trimming and the responses to Comments 17.2.4 and 17.4.2.

**17.4.14 Rosemary Maulbetsch, San Carlos Hearing Speaker, May 1, 2004**

"...The report minimizes the visual effects dramatically in Atherton – regarding OCS and trimming and removal of trees."

**Response 17.4.14** Please see the general response: Tree Trimming and the responses to Comments 17.2.4 and 17.4.2.

**17.4.15 Ali Patricia McKeon, May 21, 2004**

"Electrification of Caltrain is damaging to property values of those properties along the train tracks, as this process would entail the cutting down of a large number of Heritage trees."

**Response 17.4.15** Please see the general response: Tree Trimming and the responses to Comments 17.2.4 and 17.4.2.

**17.4.16 Judith M. Oranasu, Ph.D., May 25, 2004**

"Trees will be cut down in vast numbers during the electrification process. Electrification will convert the Peninsula into a concrete, industrial wasteland, destroying the charm of Menlo Park and other towns that prize the trees that now provide a visual screen against the train tracks."

**Response 17.4.16** Please see the general response: Tree Trimming and the responses to Comments 17.2.4, 17.4.2 and 17.4.3.

**17.4.17 Diana Peterson, May 25, 2004**

"I have grave concerns over the electrification environmental impact report. I believe that:

- "the damage to trees in the area is \*very\* significant, much more so than is understood by most in the community
- "there would be a very significant impact to neighbors along the rails, without a corresponding benefit.

"We live directly on the tracks in Menlo Park, and will be actively voicing our concerns and banding together with Atherton, RC, PA, etc to insure the our concerns get heard and addressed! This EIR should not go through at is."

**Response 17.4.17** Please see the general response: Tree Trimming and the responses to Comments 17.2.4, 17.4.2 and 17.4.3.

**17.4.18 Russ Peterson, May 25, 2004**

"The current plan does far too much damage to existing trees without significant mitigation steps. Specifically, I refer to the Atherton Menlo Park corridor but my opinion holds for most of the Right-of-Way."

**Response 17.4.18** Please see the general response: Tree Trimming and the responses to Comments 17.2.4, 17.4.2 and 17.4.3.

**17.4.19 David Tambling, May 19, 2004**

"I am writing to voice my extreme concern about the impact on Menlo Park and Atherton of the electrification proposal for Caltrain.

"From a practical standpoint, going forward with this proposal would add years to any improvements and cost tens of millions of dollars (perhaps more) in legal fees, impact studies, eminent domain battles and property owner compensation. Destroying heritage trees and property values in one of the most expensive regions in the world is sure to ignite passions and guarantees a long and costly battle.

"Philosophically, it is not right to destroy the natural beauty of these towns and kill hundreds of mature trees to save 3-4 minutes on people's commutes. With the new baby bullets Caltrain is already much faster than driving along 101; incremental improvements in speed are of little value to the community at this point.

"Please reconsider this proposal before starting down a road of endless litigation that is sure to anger the entire Peninsula and ruin Caltrain's goodwill in the community."

**Response 17.4.19** Please see the general response: Tree Trimming and the responses to Comments 17.2.4, 17.4.2 and 17.4.3.

#### **17.4.20 Ralph and Ann Whittaker, May 25, 2004**

"We are strongly opposed to electrification of Caltrain if it includes removal of numerous trees. The Almanac article states that 8-12 trees along the Palo Alto, Menlo Park border, 15-22 trees in Menlo Park, and 80 trees in Atherton would be removed for electrification. These trees are large contributors to the quality of life in these communities. They are not only visually pleasing, but also, act as a buffer to the increasingly noisy Caltrain trains.

"If there is any way possible to achieve electrification underground as PG&E seems to be pursuing with its lines, then we would approve of this project.

"Our concern is that removal of the trees and the addition of unsightly poles and wires will effect our life style and the value of our homes. This is too much to lose to improve a system that already is suffering from lack of ridership and other issues."

**Response 17.4.20** Please see the general response: Tree Trimming and the response to Comment 17.2.4 regarding the impacts to trees and the response to Comment 17.2.1 for the reasons why undergrounding the Caltrain electrical contact system would not be practicable.

#### **17.4.21 Jill Zanolli, May 25, 2004**

"I wanted to comment that I am against the electrification of the trains. I am concerned that you are overlooking the impact to neighborhoods. The need to drastically trim trees as well as the general aesthetic affect on the community is unacceptable."

**Response 17.4.21** Please see the general response: Tree Trimming and the responses to Comments 17.1.1, 17.1.2 and 17.2.4.

### **17.5 OTHER VISUAL IMPACTS**

#### **17.5.1 Joseph Grass, May 25, 2004**

"The elevation of the train tracks onto a berm going through Atherton, Menlo Park, Palo Alto, and the rest of the Peninsula will be extremely unsightly. The associated electrical wires will also add to the negative impact, being even higher than the train. This kind of elevated train track is suited to an industrial area, but definitely not to the residential neighborhoods of Menlo Park, Atherton, and Palo Alto.

**Response 17.5.1** Grade separation projects are not included in the Electrification Program, however Caltrain has an on-going program of constructing grade separations. Each grade separation project is designed individually based on the specific local conditions, thus there is no hard and fast rule about streets going under the tracks or tracks being elevated over the streets. For example Redwood City recently constructed a grade separation with a road under the tracks and Belmont recently constructed a grade separation with tracks going over the street. Generally it is more costly to depress cross streets if side streets are located along the Caltrain alignment since these side streets must also be depressed in the vicinity of the grade crossing. Typically, the least costly option for grade separation projects is to depress the street and elevate the tracks. For more information on grade separations please see response to *Comment 5.3.11*.

#### **17.5.2 Kaaren Hanson, May 25, 2004**

"Not enough consideration has been given to the alternative of keeping the train tracks at grade level, and making all streets go below grade level at the crossings. Citizens in the community with relevant engineering backgrounds have proposed alternate ideas to accomplish this, however they have been dismissed out of hand or ignored without due consideration of their ideas."

**Response 17.5.2** Please see response to *Comment 17.5.1*.



## 18.0 OTHER COMMUNITY IMPACTS

### 18.1.1 Santa Clara VTA, Roy Molseed, Sr., June 30, 2004

"Page 3-11, Table 3.12-5: The location of property acquisition should be specified and the business to be displaced should be identified.

"Page 3-115: This table, prepared in 2001, is out of date (e.g. There is a Santa Clara Police Department station located next to Santa Clara Station)"

**Response 18.1.1** As referred to in EA/EIR Section 3.12.2.2, paragraph 3, the location and size of property acquisition is provided in Table 3.16-2. *No residential properties would be affected. There would potentially be displacement of one active business, including an estimated 18 employees, if Alternative 1 is chosen for TPS2. This is a towing company located at Stockton Avenue and Vermont Street in the City of San Jose (see Figure 2.3-14).* Table 3.12-5 has been revised to indicate that there would be no non-residential displacements.

EA/EIR Sections 3.13.1 *[Public Services and Facilities] Setting*, and 3.14.1 *[Recreation] Setting*, were revised in 2008 to update the public service and park and recreational facilities located along the Caltrain Corridor. See Tables 3.13-1 and 3.14-1.

### 18.1.2 Elizabeth Blois, May 25, 2004

"The elevated track will seriously separate the community. One has to only go to San Carlos to see this impact on a live case study. The neighborhood to the east of the tracks has deteriorated since its completion and is now much more separated from the communities to the west of the tracks. We did this with highway 101. Why would we repeat this flawed design again?"

**Response 18.1.2** Please see response to *Comment* 17.5.1.

### 18.1.3 Linda Griffon, May 18, 2004

"...it is ridiculous to put high speed rail through residential neighborhoods. The Altamont Pass route is a better idea."

**Response 18.1.3** High speed rail is not part of the Caltrain Electrification Program described in the EA/EIR. The California High Speed Rail Authority *has completed* a program level environmental analysis of high speed rail alignments. For more information please see general response 5.3.

### 18.1.4 Jennifer Keith, San Carlos Hearing Speaker, May 1, 2004

"I want to ask a real quick question before I begin my comment, which is when do you expect the electrification project will be constructed.

A: Within this decade.

"Well, I'm in support of whatever you have to do to get electrification approved as soon as possible. I live 20 feet from Caltrain in San Mateo—I mean, seriously, it runs right past my bedroom window and I've noticed, since I'm relatively new to the Peninsula community, I came here from Oakland, I've noticed when I was moving to the Peninsula that the vast majority of low income communities are all centered around the freeway or along the Caltrain corridor and that was actually what made it possible for me to get a place was because of the relatively lower cost because of the environmental impact on health and noise; these are more important than visual impacts.

"I was talking to my partner the other day he was studying in one of our rooms and he could see the smoke from the diesel as it passes by, so the impact on neighborhoods is not to be diminished in any way whatsoever in comparison to visual impact—frankly, I don't think that it looks all that ugly, and also that there should be some consideration about the fact that where the diesels runs now they

effect at a much higher rate our low-income and usually our communities of color rather than the much higher income white communities who are able to locate themselves much farther, a mile away from the trains or up in the hills. That's a real significant, community sociological issue that should not be lost in this decision about whether or not to electrify Caltrain goes along with a lot of consideration about environmental racism and the impact on people who have to live along these corridors because of the unaffordability of the community that we live in. I am fully in support of electrification. I'd like to see it happen as soon as possible."

**Response 18.1.4** Comment noted.

**18.1.5      Rosemary Maulbetsch, San Carlos Hearing Speaker, May 1, 2004**

"Remind people that the Caltrain corridor passes through residential, business, and industrial areas but the environmental report has to generalize in summary. Each citizen needs to evaluate the effects on his own area."

**Response 18.1.5** Comment noted.

## **19.0 CONSTRUCTION PHASE IMPACTS**

### **19.1.1 San Mateo County Transportation Authority CAC, Doris J. Maez, April 30, 2004**

"Ridership is estimated to increase by around 8% in the Electrification Alternative, with minimal travel time savings of 2-4 minutes on most of the line (8 minutes for the Gilroy-SF trip), and has some air quality and noise benefits (p. 3-128 to 3-3-130). However, "...installation of the OCS conductors,...require night-time and weekend track occupancies, including weekend outages that would require total suspension of passenger revenue service" (p. 4-2, last paragraph). Figure 4.1-1 shows a construction period of about 30 months for OCS Poles and Wires. This is a major impact that needs to be considered carefully. Caltrain passengers have just undergone a lengthy period of no weekend service, and may not be terribly enthusiastic at the prospect of more of the same. The question is; Are the improvements in air quality, small increases in ridership and minor reductions in travel times worth the expected costs and disruptions in service that will be incurred during construction?"

**Response 19.1.1** As reported in Section 4.1.1.1, *Overhead Contact System* Installation, completing the Electrification Program will require limited suspensions of passenger service. Caltrain will carefully schedule all such suspensions of service to minimize impacts on passengers, combine electrification work with other projects insofar as possible, and use alternatives to full suspension of service whenever possible (i.e. operating passenger service on a single track and performing construction on the other track).

### **19.1.2 San Mateo County Transportation Authority CAC, Doris J. Maez, San Carlos Hearing Speaker, May 1, 2004**

"...And the lady that talked about construction phase, construction impacts: The EIR does say that there will be disruptions in service and Caltrain riders have experienced no weekend service and we don't want another repeat of that. I don't think it made a good argument for electrification."

**Response 19.1.2** Please see response to *Comment* 19.1.1.

### **19.1.3 City of Mountain View, Matt Pear, Mayor, May 18, 2004**

"Construction Schedule and Impacts

"The EIR should recommend implementation of all mitigation measures to reduce the impacts of construction noise and vibrations. Temporary relocation of residents most impacted by noise (to hotels or apartments) should also be considered."

**Response 19.1.3** The EIR does commit to mitigation measures to minimize noise and vibration impacts during construction; these are listed in Section 4.2.9.3, [Construction Noise and Vibration] Mitigation. With these mitigation measures in place, there should be no need to temporarily relocate residents during construction of OCS infrastructure. *Seven of ten* electrification traction power facilities are sited away from the vicinity of residences and other sensitive receptors. *The other three, located in Burlingame, Mountain View and Sunnyvale, are located next to the railroad tracks across a city street from residential uses.*

### **19.1.4 City of San Mateo, Department of Community Development, Stephen Scott, Principal Planner, May 14, 2004**

"9. Table 4.2-3 (page 4-19): The table indicates construction hours for the County of San Mateo. Perhaps it is a coincidence, but the construction hours noted are the same as for the City of San Mateo. We believe the table should be corrected to remove the word "County" from the San Mateo line, or add another row for the City's construction times."

**Response 19.1.4** Table 4.2-3 has been corrected in the Final EA/EIR. The County of San Mateo information has been updated and new information from the City of San Mateo has been added to the table.

**19.1.5 City of Sunnyvale, John Howe, Mayor, May 12, 2004**

“...Section 4.1.1.3 fails to describe the construction impacts of this work on roadway traffic or on pedestrians (i.e.-lane and sidewalk closures) on these bridges. These impacts shall be reported and appropriate mitigation identified.”

“7. Caltrain Service Disruption During Construction: Section 4.1.1.1 discusses construction operations. On page 4-2 is the statement that construction of OCS would require weekend and other outages including total suspension of passenger service on weekends. The exact extent of these service suspensions is unknown but Figure 4.1-1 indicates a duration of more than two years for OCS construction.

“The JPB approved a two-year suspension of weekend Caltrain service for the CTX project, which was a less costly one and thus one of lesser magnitude than the proposed electrification. However, the CTX project will yield considerable passenger benefits, and thus the service suspensions enjoyed adequate community support. If the community is to be asked to endure yet another lengthy service suspension for electrification, will the benefits be perceived as worth while?”

**Response 19.1.5** Please see response 19.1.1. The Electrification Program would provide substantial air quality, train performance, and noise reduction benefits for Caltrain. Also, while the construction time for the entire Electrification Program OCS infrastructure is about 2.5 years, the duration of construction in any one location would be much less. There are two main reasons why electrification would not require as many service disruptions as the CTX project. First, much of the CTX project consisted of replacing track, which can only be done under service disruption; and, second, the CTX project added signal system improvements and crossovers that allow Caltrain to efficiently operate bi-directional service on a single track. This operational flexibility, which was not possible when the CTX project was being constructed, is now available for construction of electrification.

**19.1.6 Richard Mlynarik, May 24, 2004**

“4-5 section 4.1.2: assumes locomotives.

“4-16 section 4.2.9: Note that electrification construction noise and interruption can be significantly mitigated by combining works on electrification with other projects along the right of way.

**Response 19.1.6** Figure 4.1-1 of the EA/Final EIR has been revised by removing the word ‘locomotive.’ The time required *manufacturing*, *commissioning*, and *testing* EMUs is approximately six months longer than for electric locomotives since prototypes must be tested by the FRA before the EMUs can be used on the railroad. The figure has been revised to include this additional time.

The comment is correct; by combining electrification with other improvement projects, the impact of disruption can be minimized. Caltrain would attempt to combine construction of Electrification Program infrastructure with other construction projects to the maximum extent feasible.

## **20.0 EA / EIR PROCESS**

### **20.1.1 U.S. Environmental Protection Agency, Lisa B. Hanf, Manager, Federal Activities Office, May 25, 2004**

#### **"Mitigation Commitments**

"Appendix A: Environmental Checklist Form (p, A-I through A-11) indicates that no environmental issues require mitigation to be incorporated in order to achieve less than significant impacts. However, Section 5.2 states that with the mitigation measures identified in Chapters 3 and 4 of the document, no unavoidable significant impacts would result from the proposed project. It should be clear what measures must be incorporated into the proposed project construction and operation, rather than presented as potential mitigation measures, in order to issue a Finding of No Significant Impact for the proposed project pursuant to NEPA (Council on Environmental Quality 40 Most Asked Questions, #39 and #40, Federal Register Vol. 46, Number 55).

#### **"Recommendation:**

"Clarify which mitigation measures included in Chapter 3 and 4 will be incorporated into the proposed project design such that the project will have no significant impacts. Provide a timeline indicating when implementation of measures incorporated into the project design and additional mitigation measures are expected to occur."

**Response 20.1.1 a)** *The Environmental Checklist Form was prepared in accordance with CEQA requirements in advance of any detailed impact analysis to preliminarily screen impact significance. It is intended only as a guide to direct the focus of the CEQA analyses. Section 5.2 of the EA/EIR is correct as stated. Mitigation measures are listed in Table S-1 of the EA/Final EIR. CEQA, Section 21081.6 requires that a mitigation monitoring and reporting program (MMRP) be adopted upon certification of the EIR in order to ensure that the mitigation measures are implemented. The MMRP specifies what the mitigation is, the entity responsible for the monitoring program, and when in the process it should be accomplished.*

b) Although the proposed project would not result in significant adverse effects, NEPA encourages mitigation for all of the impacts of a project; therefore, mitigation measures to reduce project effects are proposed. All of the proposed mitigation measures as described in Chapters 3 and 4 would be implemented and adopted as part of the final NEPA decision making document (FONSI).

### **20.1.2 State Clearinghouse, State of California, Governor's Office of Planning and Research, May 25, 2004**

"The State Clearinghouse submitted the above named Draft EIR to selected state agencies for review...The review period closed on May 25, 2004, and the comments from the responding agency(ies) is (are) enclosed...This letter acknowledges that you have complied with the State Clearinghouse review requirements for draft environmental documents, pursuant to the California Environmental Quality Act."

**Response 20.1.2** Comment noted.

## **21.0 EA / DEIR DOCUMENT CORRECTIONS**

### **21.1.1 Santa Clara VTA, Roy Molseed, Sr., June 30, 2004**

"Page 3-123, Table 3.15-2 should be updated, as it is a compilation of headways from an April 29, 2001 timetable and the February 2003 ridership report.

"Page 3-126, Table 3.15.3 shows highway traffic volumes from the year 2000, and should be updated.

"Page 3-128, Section 3.15.4 should be revised to note that the Morgan Hill Station has bike lockers. Also note that all VTA buses and light rail vehicles also have bike racks.

"Page 3-128. Section 3.15.5 (and Section 1.3.): Future rail and bus and projected impacts other related projects: No mention is made of the BART to Santa Clara County project, which was approved by the voters of Santa Clara County in November 2000, which will parallel the Caltrain alignment between Santa Clara and downtown San Jose. An EIR/EIS has been circulated and preliminary engineering is underway that includes the location and conceptual design of the route alignment and station facilities in Milpitas, Santa Clara and San Jose. The electrification EIR needs to address potential conflicts and coordination regarding integration of these two systems, particularly at the Santa Clara Station and in the San Jose Diridon Station area.

"Similarly, there is no discussion of future service increases planned by ACE and the Capitol corridor, which plan to operate additional trains serving both Santa Clara and San Jose Diridon Stations. The Future Rail and Bus Transit and Projected Impacts section also does not address the future High Speed Rail project, the Dumbarton Rail service (which is intended to operate on Caltrain tracks and serve Caltrain stations), service from Monterey County and UP freight service. These future projects, services and actions should be discussed and analyzed for synergy, conflict, safety and ridership impacts, examining the Electrification project's impact on these other services and the other services impacts on electrification.

"Page 3-136, Section 3.15.8 should be updated to indicate that Baby Bullet trains currently in service only provide space for 16 bicycles."

**Response 21.1.1** The respective sections of Chapters 1 and 3 have been updated consistent with this comment.

BART to San Jose, Dumbarton Rail, and the expected future service levels of ACE and the Capitol Corridor service were included in the ridership forecasts reported in Chapter 3. Monterey service was not included in the ridership forecasts because of the more speculative nature of the project. Coordination issues with BART and high-speed rail will be addressed during preliminary engineering and final design if the Electrification Program goes forward. In general, the Electrification Program would introduce additional poles and wires into an existing Caltrain environment well ahead of any intrusion by BART. The additional poles and wires would have only marginal effects on the possible availability of right-of-way for BART in the corridor and would generally not affect operations of other services in the corridor. For example, electrification is not expected to affect the operation of existing and future diesel service in the Caltrain corridor, whether freight or passenger, because Caltrain service levels will not change with electrified service. One exception may be modifications to the Constant Warning Time Systems to allow crossing gate operation with equivalent or improved gate down times under electrified service. This aspect is discussed in Section 2.3.2.7, Modification or Replacement of Signal System, as part of the project description. Depending upon the type of system selected, new on board equipment may be required to optimize gate down times for diesel-electric as well as electric locomotives that would be used in the corridor. The respective sections of Chapter 3 have been updated consistent with this comment.

**21.1.2 California Department of Toxic Substances Control, Barbara J. Cook, P.E., Chief, Northern California-Coastal Cleanup, April 9, 2004**

"2. Table 3.7-1 (Known Hazardous Waste Sites with Potential to Affect Proposed Traction Power Substation Sites): This table includes both the Tuntex Bayshore Rail Yard and Schlage Lock Company sites that are currently under DTSC oversight. The table should be updated to include that both sites participated in a regional groundwater study."

**Response 21.1.2** Table 3.7-1 has been *updated to 2008 conditions*. *The 2008 database search did not identify any case associated with Tuntex Bayshore Rail Yard. For the Schlage site, it is noted that fifteen gallons of sodium dimethyl dithiocarbonate were discharged on land. It was reported that the material evaporated, and no cleanup was required.*

**21.1.3 Metropolitan Transportation Commission, Bob Bates, Caltrain Liaison, May 25, 2004**

"Please reconcile the discrepancy between Table 2.3-6, which lists five existing diesel locomotives as being retained for emergency use and other areas in the EA/DEIR that identify these same diesel locomotives as being available for Dumbarton and Salinas rail service."

"Section 2.3.3.1 states that the capital costs are in constant 2003 dollars and are net of the estimated revenues from the sale of surplus equipment. Table 2.3-7, conversely, shows the sale of excess diesel locomotives as being part of the funding plan. Please reconcile this difference."

"The reference to the 2000 Ozone Attainment Plan should be corrected to the 2001 Ozone Attainment Plan (Section 3.3.2.3). In addition, MTC approved the conformity analysis in March 2002 (Section 3.3.3).

**Response 21.1.3** Caltrain's preferred option for electrification has operations beginning in 2015. With electrification, Caltrain would keep *nine* diesel locomotives for *the San Jose to Gilroy segment, Baby Bullet service, and for emergencies*. The operators of the new train services on the Dumbarton Corridor and to Monterey County would need to procure their own diesel locomotives. Since the diesel locomotives that Caltrain would retire *as electrification begins* would be near the end of their useful service at that time, no credit has been assumed for sale of the diesel locomotives. The EA/EIR text and tables in Section 2.3.3 have been revised to *reflect* these assumptions.

EA/EIR Section 3.3 has been updated to *refer to the Bay Area 2005 Ozone Strategy*. *Updates to conformity determination dates have also been made in accordance with this comment.*

**21.1.4 San Mateo County Transportation Authority CAC, Doris J. Maez, April 30, 2004**

"There are several inconsistencies between this EA/DEIR compared to the Caltrain Strategic Plan (CSP, Dec 2003) and the Transbay Terminal EIR (TBTEIR, March 2004). Weekday ridership for a 132 train schedule in 2020 is listed as 64,000 in the TBTEIR (Page 3-33) and CSP (Table 7); as 57,918 in the EA/EIR (p. S-13). Travel times in Table 3.15-6 in the Electrification DEIR are different by several minutes than travel times in Table 3.1-16 in the TBTEIR even though the same source is referenced. Further, these time differences exceed the claimed time savings of 2 8 minutes due to electrification. The CSP says that "funding for the project (electrification) will not be available until 2014", yet tables in the EA/DEIR show electrification in 2008, with complete buildout by 2020 and the TBTEIR says that "electrification of the Caltrain line is scheduled to be implemented by 2006 (p. 2-3)". Service levels of 132 trains/day are projected in 2020 and the EA/DEIR, while the CSP lists 100 trains/day in 2023 under the Moderate Growth Scenario (Table 6). In the EA/DEIR, Table 2.3-7 lists \$602M in funding sources, a shortfall of \$66M for the 2020 estimated costs, while the CSP lists a funding shortfall of \$219M by 2023. Sales tax funding for electrification is listed at nearly \$400M in the EA/DEIR and as a total of \$209M in the CSP Table 6. This is all very confusing. Not many members of the public have access to all three of these documents, but staff certainly has access to all three, and I have difficulty understanding why these inconsistencies were allowed to happen. They should be reconciled and clarified in the final document.

“...Table 3.15-1 lists SamTrans bus routes 140 & 141 as serving the San Bruno station.( p. 3-121) The current San Bruno station at Sylvan Avenue is not served directly by ANY SamTrans route. Future placement of the station at San Bruno Avenue may be served by these routes.”

“...Miscellaneous Corrections

“p. S-20, Table S-4, footnote 1, and p. 2-48, Table 2.3-.7, footnote 1

“There is no Measure B in San Mateo County. San Mateo county's Measure A which expires in 2008 generates a total of about \$55M/year, of which only a portion is dedicated to Caltrain capital costs.

“Figures 2.3-6 through 2.3-10, Figures 2.3-12 to 2.3-14, Figures 2.3-16 to Figures 2.3-10. These figures have no directional legend (i.e., north direction).”

**Response 21.1.4** There is no inconsistency in the ridership numbers because the Electrification document is reporting 2020 ridership without the downtown extension (DTX) while the other two sources include the DTX. The Electrification Program is the No-Build condition for the DTX. Note that the ridership projections for the Electrification Program and the DTX were created by different models with different procedures, which leads to differences between the DTX No-Build ridership and the Electrification Build ridership. But both models agree on the ultimate 2020 DTX Build ridership.

The travel times in Table 3.15-6 of the Electrification EA/EIR have been revised to reflect the currently expected operating scenario in 2035; they are not necessarily the same as those in the DTX EIS/EIR because of the changes in Caltrain operational planning that have occurred in *recent* years. See *Response to Comment 6.1.2 for additional information about travel time savings.*

The implementation year of the Electrification Program is now *2015, which is generally* consistent with the Caltrain Strategic Plan. The service levels of *114 trains per day in 2035 is also consistent with the full* Build-Out Scenario in the Strategic Plan; Caltrain considers the Build-Out Scenario to be the preferred scenario under which electrification would be implemented.

Table 2.3-7 has been updated to be consistent with funding expected to be available under the Build-Out Scenario. The *\$300 million in local funds, including county sales tax, shown* in the table is included in the amounts shown in Table 8 of the Strategic Plan.

With respect to transit service at the San Bruno Station and other Caltrain stations, the listed service is within walking distance of the station.

Thank you for pointing out the mislabeling of the measure funds; it has been corrected to reflect Measure A. The referenced figures have also been updated in the document.

*The replacement figures included in Section 2.3.2.3 of the EA/FEIR all include a directional legend (north arrow) indicator.*

**21.1.5 San Mateo County Transportation Authority CAC, Doris J. Maez, San Carlos Hearing speaker, May 1, 2004**

“I’m on the San Mateo Transportation Authority Citizens Advisory Committee, so I’ve been following this pretty closely. In many ways, my comments echo those of Onnolee Trapp, I guess we think along same lines. I’m particularly concerned about the inconsistencies in Transbay Terminal EIR and this one and the Caltrain Strategic Plan: ridership, travel times, funding sources, time frames, level of service, all of those things are inconsistent; there are probably more. Those are ones that I’ve found. I’m submitting more specifics in written comments.”

**Response 21.1.5** Please see general response: Consistency of Electrification with Caltrain Strategic Plan.



**21.1.6 Santa Clara VTA, Roy Molseed, Sr., June 30, 2004**

"Page 1-14: Much of Section 1.3 is out of date and should be updated (e.g. Vasona LRT will open in mid 2005.)"

**Response 21.1.6** EA/EIR Section 1.3 has been revised to present current conditions.

**21.1.7 Town of Atherton, Kathy McKeithen, Mayor, May 20, 2004**

"Bus Transit

"Section 3.15.1, and Table 3.15-1, should note that the Atherton station is served by shuttle buses for several local schools."

**Response 21.1.7** EA/EIR Section 3.15.1 and Table 3.15-1 have been revised as suggested by the comment.

**21.1.8 City of Brisbane, Michael Barnes, Mayor, May 12, 2004**

"...the City Engineer has pointed out several corrections that should be made to the document. The Bayshore Station is listed as being in CCSF although it has been relocated to the City of Brisbane (page 1-2), that Table 1.5 (page 1-18) should be appended to include a requirement for a Haul Permit (for transport of any spoils in excess of 6 cubic yards on City Streets) and a Traffic Control Permit (if any detours or traffic control) from the City of Brisbane, and that Table 3.16-1 (page 3-137) is incomplete (contact Brisbane DPW for location, size and number of pressurized mains, sewer force mains and gravity storm crossings of the JPB ROW)."

**Response 21.1.8** Section 1.2 has been corrected to list the Bayshore Station as in Brisbane; Table 1.5-1 has been revised to include the City's Haul Permit and Traffic Control Permit. It is recognized that the information on utilities presented in the environmental document may be incomplete. Caltrain *will* coordinate with local jurisdictions as well as utility providers during preliminary engineering and final design to ensure that all utilities that cross or run longitudinally along the Caltrain right-of-way are identified.

**21.1.9 City of San Mateo, Department of Community Development, Stephen Scott, Principal Planner, May 14, 2004**

"4. Various locations: The text should be corrected to eliminate references to the Bay Meadows Golf Course, which was removed in 1996 or 1997 to make way for new horse barns for the racetrack operation. References exist at page 3-17 (first paragraph) and in Table 3.14-1 on page 3-119, but may elsewhere in the document."

"...5. Page 3-99: The report should acknowledge that if the San Mateo Rail Corridor Transit-Oriented Development Plan were approved, there would be the potential for PS-4 to be located within 250 feet of residential units."

"...7. Table 3.15-4 & Table 3.15-7: The inconsistency should be fixed between Table 3.15-4, which indicates that there are 294 spaces at the San Mateo station and Table 3.15-7 (page 3-135), which indicates that the demand for 304 parking spaces under the electrification alternative is met and there is no demand shortfall. The 294-space figure should also be corrected to 243 spaces, as indicated by the City's survey."

**Response 21.1.9** See *Response to Comment 2.4.3*. Tables 3.15-4 and 3.15-8 have been revised to provide updated parking information.

**21.1.10 City of Santa Clara, Geoffrey Goodfellow, Director Planning and Inspections, May 25, 2004**

“...Section 3.16 provides information related to existing utility and service systems within the Caltrain Corridor right-of-way. The City of Santa Clara provides electric and water service. The following corrections/additions should be made to Table 3.16-1, Item 24:

- “Overhead electrical wires cross the right-of-way at 8 locations. The wires have 60kV and 12kV capacities. The 60 and 12 kV overhead electrical wires run parallel with the JPB right-of-way at various locations.
- “Underground electrical wires cross the right-of-way at 3 locations. The wires have 12kV capacity.
- “Construction could affect existing water and electric facilities. Electric and water facilities should be identified on project plans and should be avoided or may need to be relocated, and shall require City review and approval.

**Response 21.1.10** It is acknowledged that the information on utilities presented in Table 3.16-1 and 3.16-2 may be incomplete. Caltrain *will* coordinate with local jurisdictions as well as utility providers during preliminary engineering and final design to ensure that all utilities that cross or run longitudinally along the Caltrain right-of-way are identified.

**21.1.11 League of Women Voters, Onnolee Trapp, San Carlos Hearing Speaker, May 1, 2004**

“...We recognize this is only one document among several currently circulating. The Transbay Terminal EIR and the Caltrain Strategic Plan were released recently. The Transbay Terminal EIR discusses dual-mode locomotives which was not discussed in this EIR document. We are wondering why because Caltrain Electrification Strategic Plan says that funding for electrification will not be available until 2014 and you are talking about 2008. Something is not coordinated here. This throws into question all of the tables that project 2008 level of service and costs. You need to do update of the tables, especially as it appears that you were using the same Parsons source for the tables. Fleet requirements for 98 and 132 trains. The Caltrain Strategic Plan says 100 trains. We are very concerned about your figures in the increase in the number of passengers of 4,118 and the reduction of only 2 to 4 minutes of travel time where the Transbay Terminal EIR report says 14 to 15 minutes possible, and so we have just got to get everything on the same page here. Improve end to end train running time beyond mere eight minutes.”

**Response 21.1.11** Please see general response: Consistency of Electrification and Caltrain Strategic Plan and response to *Comment 21.1.4*.

**21.1.12 Andrew Cigolie, May 4, 2004**

“There were comments on Saturday around the several recent EIRs and/or Strategic Plans not all being in-sync with the figures and assumptions. This needs to be corrected.”

**Response 21.1.12** Please see general responses: Consistency of Electrification and Caltrain Strategic Plan, Caltrain Electrification and Transbay Terminal/Caltrain Downtown Extension Project, and response to *Comment 21.1.4*.

**21.1.13 Richard Mlynarik, May 24, 2004**

“1-13 section 1.3.1: Note that the Caltrain downtown extension FEIR was approved on 22 April 2004.

“2-1 section 2.1: ‘freight’ is misspelled in the third paragraph.

“The Caltrain service description should be updated to describe the 86 trains/weekday schedule which will be current ‘today’ at the time the FEIS appears.

"2-5 section 2.3.1 table 2.3-1: The fleet inventory seems inconsistent.

"The 'Year 2001 (80 trains/weekday)' row should be updated to the present day (assuming FEIR publication is post 5 June 2004): i.e., 'Year 2004 (86 trains/weekday)'

"Today's Caltrain passenger fleet consists of 93 gallery cars (73 built circa 1986, 20 inexplicably ordered in early 1998), 17 Bombardier bi-level cars, and 14 disintegrating ex-VRE Budd trailers. It is unclear where the count of 19 "Other Existing Cars" comes from.

"The assumption that 93 gallery cars will be available in "Year 2020" is unrealistic: 73 of those cars will be more than 30 years old, and will have required replacement by that time."

**Response 21.1.13** The EA/Final EIR has been revised to address these comments. *It is noted that, as of March 2008, Caltrain operates a total of 98 trains per day between San Jose and San Francisco. Caltrain currently (2008) operates a fleet of 29 diesel locomotives and 118 trailer cars.*

## **22.0 ONGOING PLANNING AND AGENCY COORDINATION**

### **22.1 REGIONAL AND LOCAL AGENCIES**

#### **22.1.1 Department of Transportation, Timothy C. Sable, District Branch Chief, IGR/CEQA, April 2, 2004**

"Thank you for including the California Department of Transportation (Department) in the environmental review process for the proposed project. The DEIR indicates the construction of over-bridge barriers on State roadways. Any work within the State right-of-way (ROW) will require an approved traffic control plan and an encroachment permit. To apply the applicant must submit a completed encroachment permit application, environmental documentation, and five (5) sets of plans (in metric units), clearly indicating State ROW, to the following address:

"Mr. Sean Nozzari, District Office Chief  
"Office of Permits  
"California Department of Transportation, District 04  
"P. O. Box 23660  
"Oakland, Ca 94623-0660

"Should you require further information or have any questions regarding this letter, please call Tom Rolley, of my staff at (510) 622-8706."

**Response 22.1.1** Comment noted, Caltrain will work with Caltrans to obtain all appropriate permits before beginning construction.

#### **22.1.2 Santa Clara VTA, Roy Molseed, Sr., Environmental Planner, June 30, 2004**

"Page 1-17, section 1.5: Please clarify the statement "will attempt to comply with local regulations affecting any of its activities outside the JPB right of way," mean? Is the JPB not required to comply with such regulations?

"Page 1-19: Would not Santa Clara County need to issue a permit for construction that might impact the Lawrence Expressway overcrossing?

"Page 1-19: It seems likely that there would be impacts to VTA light rail operations in Mountain View. This would necessitate an access permit and other approvals."

**Response 22.1.2** Words, "attempt to" have been deleted from the statement.

Possible need for an Encroachment Permit from Santa Clara County has been added to Table 1.5-1.

Present proposals for electrification of the 2-track Caltrain mainline through Mountain View would not impact the VTA LRT system. However, the possible need for an access permit or other approvals in the event of such impact will be added to Table 1.5-1.

#### **22.1.3 Transbay Joint Powers Authority, Maria Ayerdi, Executive Director, April 21, 2004**

"On behalf of the Transbay Joint Powers Authority, I would like to thank you and the Peninsula Corridor Joint Powers Board for the opportunity to comment on the Caltrain Electrification Program Environmental Assessment/Draft Environmental Impact Report. We fully support your efforts to electrify Caltrain and look forward to working with your staff in the months ahead in the fulfillment of this very worthwhile objective.

"Since the Transbay Terminal/Caltrain Extension Program will affect the existing Caltrain operation, and therefore at least the north end of the Caltrain Electrification Program, we will need to coordinate our respective design and construction management activities.

"Following are some of the areas that will require close coordination during the design, construction, testing and startup periods:

- "Layout and design of the affected trackage
- "Layout and design of the storage and maintenance facility at 7th and Townsend
- "Layout and design of the traction power system including the design and placement of parallel stations
- "Layout and design of the overhead contact system.
- "Layout and design of the signal system
- "Utility workaround and relocation
- "Final inspection and testing of the systems affected by both programs

"In addition, we are interested in keeping abreast of rolling stock decisions, including use of dual mode locomotives, since changes of vehicle type could affect our clearances, platform dimensions, etc.

"If our construction programs overlap, it will be important to jointly organize and stage our respective activities to minimize their effect on the existing Caltrain passenger rail service.

"You may count on us as strong supporters of the Caltrain Electrification Program. We would be happy to answer any questions you may have and look forward to our continued cooperative working relationship."

**Response 22.1.3** Caltrain appreciates the support of the Transbay Joint Powers Authority for this important project and will work closely with the TJPA on all aspects of the electrification project.

**22.1.4 Pacific Gas and Electric Company, Loren Loo, Senior Project Specialist,  
April 22, 2004**

"Thank you for the opportunity to comment on the DEIR for the Caltrain Electrification Program.

"Pacific Gas and Electric Company (PG&E) recognizes the key role which alternative mode transportation projects play in the improvement of the air quality and congestion in the San Francisco Bay Area. Projects of this nature will also help ensure the continued vitality of the Silicon Valley growth and overall economic conditions in years to come.

"The DEIR indicates that electric service for this project will be provided by PG&E via existing 115 kV transmission facilities interconnecting into the Caltrain system at various locations (traction substations, switching stations and paralleling stations). We would like to note that while some discussion and analysis have been made regarding the site-specific electric facilities necessary for the operation of the system, there is no consideration given to analysis of potential impacts from any necessary extensions of PG&E's 115 kV electric transmission lines out to those sites. In addition, Table 1.5-1, "Permits and Approvals Anticipated To Be Required" makes no reference to the California Public Utilities Commission approval process for the construction of any new electric transmission line greater than 50 kV by any State regulated utility. The exclusion of adequate environmental review of such facilities in the project EIR could have a significant adverse impact upon the overall project schedule and costs.

"Pacific Gas and Electric Company (PG&E) is subject to the jurisdiction of the California Public Utilities Commission (CPUC), and must comply with CPUC General Order 131-D (Order) on the construction, modification, alteration, or addition of all electric transmission facilities (i.e., lines, substations, etc.). This includes facilities to be constructed by others and deeded to PG&E. In cases where no new line over 200 kV is required and PG&E's electric facilities are part of a larger project (i.e., electric generation plant), the Order exempts PG&E from obtaining a permit from the CPUC provided its planned facilities have been included in the larger project's California Environmental Quality Act (CEQA) review, the CEQA document has been circulated to the State Clearinghouse, and the project's lead agency (i.e., California Energy Commission or local permitting agency) finds no significant unavoidable environmental impacts from construction of PG&E's facilities. PG&E or the

project developer may proceed with construction once PG&E has filed notice with the CPUC and the public on the project's exempt status, the public has had a chance to protest PG&E's claim of exemption, and the notice is final. If PG&E's facilities are not evaluated in another agency's environmental review or if the interconnecting line is over 200 kV, and no other exemptions are applicable, PG&E may need to seek approval from the CPUC (i.e., Certificate of Public Convenience and Necessity or Permit to Construct). Although the process may be expedited if an environmental review has already taken place, the process could take as long as 18 months or more if the CPUC needs to conduct its own environmental evaluation (i.e., Negative Declaration or Environmental Impact Report).

"To avoid these delays, the project proponent is urged to include all PG&E facility work in its project description and application to the lead agency performing CEQA review on the project. The lead agency must consider the environmental impacts of the interconnection electric facility, whether to be built by the developer with the intent to transfer ownership to PG&E or to be built and owned by PG&E directly, and make a finding of no significant unavoidable environmental impacts from those facilities. If the interconnection facilities do not include a new line over 200 kV, PG&E would then file an Advice Letter with the CPUC and provide public notice on proposed construction of the facilities. (The noticing process takes about 90 days if no protests are filed, but should be done as early as possible so that a protest does not delay construction. PG&E has no control over the time it takes the CPUC to respond when issues arise.). If a separate Permit to Construct is required by the CPUC, the timelines on the chart on Figure 4.1-1 "Estimated Construction Phasing for Caltrain Electrification Program Alternative" would need to be amended to reflect the additional time (18 months prior to Electrical Equipment interconnection) required by PG&E to go through this regulatory process.

"Facilities built under this procedure must also be designed to include consideration of electric and magnetic field (EMF) mitigation measures pursuant to PG&E "EMF Design Guidelines of New Electrical Facilities Transmission, Substation and Distribution."

"Please see Section III in General Order 131-D. This document can be found in the CPUC's web page at: <http://www.cpuc.ca.gov/published/Graphics/589.PDF>.

"In summary, it is in the best interests of the PCJB and PG&E to work collaboratively to ensure the successful implementation of the Caltrain Electrification Program through the adequate environmental review of any new 115 kV transmission lines in the DEIR/FEIR. We would welcome the opportunity to discuss our comments in greater detail with your project team.

"Please feel free to contact me at (415)973-5817 or Mr. Rocco Colicchia at (415)973-1064 if you have any questions or require additional information."

**Response 22.1.4** Connections to the 115 kV transmission system would be required only at the two substation locations; *TPS-1 and TPS-2*. All of the other traction power facilities - paralleling stations and switching stations - would require service only from the local distribution system. The proposed substation sites, as presented to and discussed with PG&E, have all been selected on the basis that they are in close proximity to existing transmission lines, that direct taps should be feasible, and that, as a consequence, there should be no requirement for construction of new transmission lines or structures. The JPB will continue coordinating with PG&E to ensure the successful implementation of the required inter-connection arrangements.

#### **22.1.5 Union Pacific Railroad, Tom Ogee, Chief Engineer–Design, May 25, 2004**

"The Union Pacific Railroad appreciates the opportunity to comment on the proposed CALTRAIN Electrification Program. The proposed project has significant impact to the railroad and will require extensive coordination between the Peninsula Corridor Joint Powers Board and the Union Pacific Railroad.

"In response to your request for comments, we submit the following:

"1. The project must not impact or preclude the Union Pacific's responsibility to fulfill its common carrier obligations either by limiting our ability to serve existing and future customers or by limiting future expansion capabilities."

"...8. Proposed designs of the electrification system shall be submitted to the Union Pacific Railroad engineering department for review and approval prior to construction."

**Response 22.1.5** The proposed Electrification Program will not affect UPRR's ability to operate freight service using diesel locomotives on the Caltrain alignment. UPRR's review capacity is contained in the Joint Facility Agreement.

## **23.0 GENERAL SUPPORT FOR AND OPPOSITION TO ELECTRIFICATION**

The following comments offering general support for or opposition to the Electrification Program are noted.

### **23.1 GENERAL SUPPORT FOR ELECTRIFICATION**

#### **23.1.1 Michael Griffin, Chair, Palo Alto Planning & Transportation Commission, May 3, 2004**

"I wish to register a strong YES for Caltrain electrification. It's clean, yields a faster schedule, reduces noise and air pollution, and makes the transition possible to SF Transbay Terminal sooner.

"I serve on the Palo Alto Planning & Transportation Commission. We heard a presentation 2 months ago by Caltrain that appeared to under-play electrification. Why, I know not. But my commission was basically supportive. And I personally am VERY supportive, despite the high cost and less-than-attractive-wires. Pls. add my vote to your list of supporters."

#### **23.1.2 Architecture 21, Michael Kiesling, May 25, 2004**

"Thanks for the opportunity to comment on this crucial project, not just for Caltrain and its passengers, but for the communities that Caltrain traverses and the entire Bay Area. Electrifying the railroad will improve train performance, remove the uncertainty of fluctuations in fuel prices from Caltrain's budget, ease vehicle maintenance, and provide a cleaner and quieter neighbor for the towns and cities the railway runs through."

#### **23.1.3 Bay Rail Alliance, Margaret Okuzumi, May 25, 2004**

"We have strongly supported the Electrification project for many years and are pleased to see it move forward."

#### **23.1.4 Nick Perry, San Carlos Hearing Speaker, May 1, 2004**

"I am in full support of Caltrain Electrified. I live near the rail line in Palo Alto within less than a mile away. So it has a good impact and I like to take train a lot. I'm supportive because of economic and resource issues. I heard that petroleum will run out in ten years. This affects not only diesel locomotives but also airplanes and anything that runs on fuel. We will ultimately depend on electrification of Caltrain. This will set the stage for high speed rail in the future. If petroleum does run out, we will have to depend on electric railways for long distance transportation in Bay Area and California and the rest of country. I am in full support and I hope this plans goes through."

#### **23.1.5 David Billeci, May 1, 2004**

"Please go ahead with electrification. It's proven in Japan and Europe. It will work here!!"

#### **23.1.6 Barry Nelson Brams, May 10, 2004**

"Great Idea!!! I'm all for it!"

#### **23.1.7 Charlie Cho, May 17, 2004**

"I strongly support the electrification of Caltrain. It is an idea whose time has come, especially in the face of rising fuel costs.



"I hope electrification will be an opportunity seized by Caltrain to greatly modernize and streamline its operations, enabling it to provide rapid transit-like levels of service and offer a legitimate alternative to the automobile."

**23.1.8 M. Jason DeWees, May 4, 2004**

"I am very much in favor of Caltrain electrification from Gilroy (or wherever the southern terminus will be) and San Francisco Transbay or 4th Street. The monomaniacal obsession of San Jose's mayor with BART should not get in the way of enhancing travel for other Santa Clara County residents and the rest of the Peninsula. The addition of overhead wires will be more than compensated by the loss of diesel exhaust and noise and the enhancement of speed and service into the Transbay Terminal subway."

**23.1.9 Lambertus Hasselink, May 1, 2004.**

"Electrification of Caltrain is long overdue and should be implemented as soon as is practical. Please let me know if you need any further support for this project."

**23.1.10 Philip Hutcherson, April 21, 2004**

"Electrification makes good sense from a local sound and diesel pollution standpoint."

**23.1.11 Bill McFarland, May 25, 2004**

"Way to go! I fully support your efforts to electrify Caltrain. Please give this project your highest priority! I ride Caltrain 5 days a week to go to work, and would love to see this project come to fruition. To have a less noisy and clean system would be wonderful."

**23.1.12 Jeff McGraw, May 25, 2004**

"Regarding the Caltrain Electrification Draft Environmental Impact Report, I strongly support the proposed electrification of Caltrain and urge that completion of this project be made a top priority. Electrification will mean trains that are smoother, quieter, faster, which translates to better on-time performance and a larger, more satisfied customer base.

"Furthermore, significant reductions in air pollutants will result as compared with the present diesel train service. Savings in track maintenance costs may also result from the use of the much lighter engines compared with the present diesel locomotives.

"Upgrading Caltrain in this manner will provide a more superior alternative to the automobile, a worthy goal."

**23.1.13 Darin McGrew, April 6, 2004**

"Okay, so electrification is good:

- "the trains will be quieter (except for whistles at crossings)
- "the trains will accelerate/decelerate faster (making it easier to provide full service while meeting the 4hr round trip goal)
- "the trains pollute less (and can travel in a tunnel to get to the proposed unified Caltrain/BART/MUNI/whatever transfer station)
- "the trains are more reliable (an excuse to upgrade to modern equipment?)"

**23.1.14 Jack Perry, April 24, 2004**

"In general: The sooner we electrify the better!"

**23.1.15 Vina Stallman, April 24, 2004**

"Please do it yesterday!"

**23.1.16 Sara Tanenbaum Schneider, May 4, 2004**

"I support this plan to make Caltrain cleaner and faster."

**23.2 GENERAL OPPOSITION TO ELECTRIFICATION**

**23.2.1 Marcy Abramowitz, May 25, 2004**

"I am writing to express my opposition to Caltrain's electrification plan. I do not believe that adequate attention has been paid to the environmental issues or to the impact that electrification will have on adjacent neighborhoods. I also believe that electrification should be considered in concert with plans to build a bullet train to LA. Our rail system—and all those that would be impacted by Caltrain's decisions—would benefit from a proper long-term view."

**Response 23.2.1** The EA/EIR presents a complete analysis of the environmental impacts of the Caltrain Electrification project. For more information on the relationship between electrification and high speed rail and Caltrain's long term vision please see general responses: Electrification and High Speed Rail and Electrification and Caltrain Strategic Plan.

**23.2.2 Elizabeth and Marsden Blois, May 25, 2004**

"P.S.—The Caltrain Web location [www.CalTrain.com](http://www.CalTrain.com) has not been available for much of this evening so I was not able to pull up and refer to the EIR. Was this outage coincidence or by design?"

**Response 23.2.2** Caltrain apologizes that the website was unavailable during the meeting. This was an unplanned occurrence.

**23.2.3 Hamid Farzi, May 20, 2004**

"It's interesting – almost everyone I know is actively in support of developing public transportation for others. Isn't it strange these are the same people who never use, and likely never will use this form of transportation themselves."

**23.2.4 Patti Frazier, May 25, 2004**

"I object to the electrification."

**23.2.5 Ali Patricia McKeon, May 21, 2004**

"I oppose the Electrification of Caltrain."

"I believe that this change provides a very marginal benefit and the negative effects largely outweigh the positive."